

**Lauc T., Matić S., Mikelić, N.**

*University of Zagreb, Faculty of Philosophy, Department of Information Sciences, CROATIA*

## Educational multimedia software for English language vocabulary

Pages: 117-121

# **Current Research in Information Sciences and Technologies**

## Multidisciplinary Approaches to Global Information Systems

Vicente P. Guerrero-Bote (Editor)

Proceedings of the I International Conference on Multidisciplinary  
Information Sciences and Technologies, InSciT2006  
Mérida - SPAIN  
October, 25th-28th, 2006

ISBN-10 CD-ROM: 84-611-3106-1  
ISBN-13 CD-ROM: 978-84-611-3106-8

ISBN-10 Whole Edition: 84-611-3103-7  
ISBN-13 Whole Edition: 978-84-611-3103-7

ISBN-10 Volume II: 84-611-3105-3  
ISBN-13 Volume II: 978-84-611-3105-3

Open Institute of Knowledge  
(Instituto Abierto del Conocimiento)  
Antonio Álvarez 6  
06005 Badajoz, SPAIN  
Phone: +34 924221935  
Fax: +34 924221935  
<http://www.instac.es>

# Educational multimedia software for English language vocabulary

Lauc T.<sup>1</sup>, Matić S<sup>2</sup>., Mikelić, N.<sup>3</sup>

*University of Zagreb, Faculty of Philosophy, Department of Information Sciences, CROATIA*

The paper describes research on using multimedia educational software for the English language vocabulary within the English language course lesson. The research was conducted by offering two forms of the same learning content. One form consisted of classical paper material, and the other one was in the form of the software. Research was conducted with two groups of learners attending an English course as a foreign language course, i.e. two groups of learners on the same level of English language knowledge. One group dealt with the classical paper material, and the other group dealt with the interactive multimedia software. The learners' existent knowledge of the learning material was pretested at the beginning of both lessons, and both groups of learners got the same final test. The results indicated the great level of disparity between the two groups of learners regarding their acquisition of new vocabulary.

Keywords: CALL, interactive multimedia software, motivation, language course lesson

## 1 INTRODUCTION

Until recently, computer-assisted language learning (CALL) was a topic of relevance mostly to those with a special interest in that area. Today, the majority of language instructors must begin to think about the implications of computers for language learning. In the practice courseware, the computer serves as a vehicle for delivering instructional materials to the learner. It is proved that repeated exposure to the same material becomes beneficial or even essential for learning. This makes computer ideal for carrying out repeated exercises, since it does not get bored with presenting the same material and can provide immediate feedback. A computer can also present such material on an individualized basis, enabling learners to proceed at their own pace. CALL is one of few methods proved to make the boring drill process of language acquisition interesting and motivating. Multimedia technology integrated with the computer assisted learning allows the different media (text, graphics, sound, animation, and video) to be accessed on a single machine. This creates a quite authentic learning environment and different skills are easily integrated, since the variety of media makes it natural to combine reading, writing, speaking and listening in a single activity. Also, CALL nowadays provides a lot of opportunities for interaction with different characters and cultural information.

Computer technology offers an alternative to time-consuming activities that are part of traditional language learning methods. The aim of this research is to prove that the use of multimedia educational software in English language course additionally motivates learners to learn faster and get better results. Dealing with learning material in electronic environment accelerates the process of material exchange and feedback on exercises allowing the user to learn in a dynamic and interactive way. Therefore, compared to the classic method of language learning, it conveys better results concerning the learner's acquisition of knowledge.

## 2 RESEARCH MATERIAL AND METHODS

The research was conducted on a sample of two groups consisting of 43 Croatian learners who learn English as a foreign language in the 3<sup>rd</sup> grade of elementary (K-12) school. The aim was to exam the impact of using educational software in the classroom regarding acquisition of new vocabulary. Two types of lesson for the same level of learners and for the same learning content were offered. One group of learners dealt with the multimedia software that has been specially developed for the purpose of acquiring certain vocabulary, and the other group dealt with the same learning content, but conducted in a classic, traditional way. The activities held during the classic lesson were as similar as possible to those contained within the software. Within both approaches, the content and the amount of learning material were the same.

<sup>1</sup> Tomislava Lauc, Faculty of Philosophy, I. Lučića 3, 100000 Zagreb, Croatia, tlauc@ffzg.hr

<sup>2</sup> Sanja Matić, Faculty of Philosophy, I. Lučića 3, 100000 Zagreb, Croatia, smatic@ffzg.hr

<sup>3</sup> Nives Mikelić, Faculty of Philosophy, I. Lučića 3, 100000 Zagreb, Croatia, nmikelic@ffzg.hr

At the beginning of both lessons, the learner's existent knowledge was pretested in both groups. The aim of the pretest was to check on their existent comprehension of the vocabulary that was dealt with during the lessons. The test was designed in a comprehensive way; the 24 words were listed in a column, and the learners were asked to provide the Croatian translation of the words they knew. At the end of the lessons, a final test was given to the students, checking their comprehension of newly acquired nouns and additionally – spelling of the verbs. Objective results of the learners' comprehension were gained by comparing the given results.

## 2.1 Multimedia educational software

The software was developed by students within the elective course “Multimedia presentation of knowledge” at the Department of Information Sciences<sup>4</sup>. It was designed in the authoring tool Flash. The idea was to produce the software for the English language vocabulary learning<sup>5</sup>. The segment of the developing software is constructed with the purpose of designing a classroom lesson.

The idea could be observed from the aspect of learner's motivation for the foreign language learning, especially from the younger learner's aspect. It means that the dynamic and interactive presentation of the learning content, if designed well, could be very motivating for the young learner. Moreover, when presented with the new vocabulary through animation, learners seem to perceive certain materials more naturally [4].

The starting point of the lesson is a comic that introduces the story on which the learning material is based. Comic describes an everyday-life situation where the protagonists are the character named Harry and his family. Through this story, a certain vocabulary is highlighted. The same vocabulary is later retroactively repeated through a sequence of six different multimedia activities: fill-in-the-blank activity for animated verb, coloring book, spelling exercise, drag-and-drop activity, make a selection and memory game, respectively. The vocabulary counts 24 words; 8 verbs and 16 nouns, the 8 pairs of which are contextually connected with the corresponding verb (e.g. pillow and blanket with the verb sleep, knife and fork with the verb eat, etc).

At first, the 8 highlighted verbs from a comic story are presented through the verb animation activity where the movement of the Harry's family member is animated in order to simulate a certain verb. A learner is asked to type in a verb that describes what that character is doing. Several forms of a specific verb are acceptable, depending on how the learner perceives the action.

After the verb animation, the second activity is the coloring book through which the nouns are presented. Each screen of the coloring book consists of a non-animated picture presenting a certain verb and of two nouns that are contextually connected to the verb. The nouns appear as the learner scrolls over the offered colors with the mouse. Then the cursor of the mouse changes color and the learner has to dye a specific part of the picture.

The third activity is the spelling exercise realized through drag-and-drop activity form. Below the corresponding picture presenting one of the 8 verbs, shuffled letters are lined and the learner should put them in the correct order to form a word.

The fourth is drag-and-drop activity. In this activity, the focus is on the 8 pairs of contextually linked nouns. Below the picture presenting a verb, there are two words, i.e. nouns that relate to specific part in the picture and the learner should drag the written words to the specific part in the picture. The buttons with words match only those specific parts.

The fifth activity is making a selection. There are 8 pictures lined on the screen and the learner should select an appropriate picture by clicking on it. On top of the pictures, one of the 8 verbs is highlighted, and the learner's task is to select the corresponding picture, i.e. the picture that relates to the highlighted verb. This activity is constructed repetitively in order to establish the learner's acquisition of vocabulary knowledge. A counter is embedded within the activity, and it counts how many times the learner has made a selection before choosing the appropriate picture.

The sixth activity is the memory game, and it is also repetitively constructed. A counter is embedded within the activity, and it counts the number of attempts the learner has made to match the 8 pairs of pictures presenting the 8 verbs. After the pairs have been matched, the learner is provided with textual information on the number of attempts, and each picture gets accompanied by the written corresponding verb. When the learner resets the memory, the pictures shuffle.

It is important to stress out that through each of the six activities learners are provided with an instant

<sup>4</sup> Faculty of Philosophy, University of Zagreb, Croatia

<sup>5</sup> The idea is motivated by multimedia software Globetrotter [5].

feedback on the correctness of their selection. The feedback is provided either by a textual message and/or by limiting the area of matching fields.

## 2.2 Traditional versus computer-aided lesson

The two lessons were held in the same school, with learners of third grades. Both groups consisted of approximately the same number of learners, i.e. 23 learners, which is the average Croatian class section. Regarding the content, both lessons were the same, but the content was differently presented. One lesson was held with the educational multimedia software support, and the other one was held traditionally, with classic language learning methods. At the beginning of both lessons, the learners were given a testing exam in order to test their existent knowledge on the vocabulary that will be processed within the lessons. The test consisted of 24 English words for which the learners were asked to provide a Croatian translation in order to check on their comprehension of the vocabulary.

The computer-aided lesson was held in a sequence of activities described in the chapter 2.1. The learners worked in pairs because there were not enough computers for individual work. The six activities are designed within the software in a way that each is recoverable, i.e. each of the learners working in pairs can do the exercise individually. The learners were extremely motivated and eager to try each multimedia activity on their own. At the end of the lesson the learners were given a survey consisting of two questions; the first question checked on their satisfaction with computer supported language learning, and the second one checked on their eagerness to continue learning the English language this way in the future.

The activities in the classic, traditional lesson were adjusted as much as possible to the learning content presented through the software in order to keep the same or very similar classic-method activities. Therefore, instead of verb animation, there was mine dictation; the learner got a task to perform a certain verb by acting. The color-book activity and the drag-and-drop activity were embedded into one activity; the same pictures from the software were lined on the blackboard, and learners were supposed to mark the corresponding part in the picture that a specific noun refers to. The spelling exercise activity was organized in a way that the learners worked in groups of three and four. Each group got the shuffled letters of a word, and they competed on the speed of putting the letters in the correct order to form a word, etc.

At the end of the lessons, both groups of learners got the same final test which tested their acquisition of the learning material. The final test tested the learners' knowledge on spelling, recognition and meaning of the word. The test consisted of three assignments. The first one offered the pictures and the shuffled letters of 8 verbs, and the learners were asked to organize the letters in a way to form a verb that a picture presents. The second assignment offered pairs of contextually linked nouns, and the learners' task was to match the pair of nouns with the corresponding picture. Finally, in the third assignment the learners were asked to provide the Croatian translation for those 16 nouns.

## 3 RESULTS

The results support the main aim of the research. Firstly, pretest results prove that both samples of learners were at the same level of English language knowledge. Considering the small samples of examinees, the percentage of correct answers was approximately the same for both groups – 45% among the learners that later dealt with the software, and 42% among the other group of learners. Secondly, final test results indicate that the group of learners dealing with the software conveyed considerably better results than the other group of learners. Focusing only on the learners' recognition of 16 nouns (8 pairs of nouns that are contextually connected with the verbs), the comprehension of which was measured through the noun-acquisition assignment, it may be concluded that the learners dealing with the software showed significantly better results. Comparing the pretest and final test results, the pretest results show that the percentage of correctly recognized nouns was approximately the same within both groups: 32% for the group dealing with the software, and 29% for the other group. However, the percentage of correctly recognized nouns in the final test (the 3<sup>rd</sup> assignment in the final test was equal to the pretest – providing Croatian translation for the English words) shows great deviation between the two groups. The group dealing with the software acquired 82% of 16 nouns, compared to 32% from the pretest, which they had already been familiar with, and the group that dealt with classic learning methods, acquired only 50% of 16 nouns, compared to 29% from the pretest.

Except for noun-acquisition assignment, the final test had two additional assignments, spelling check of the verbs and item recognition. The assignment concerning spelling check was organized in a way that the learners were provided with a picture that presents a corresponding verb together with the shuffled letters out

of which they had to compose a certain verb. The learners dealing with the computer-aided spelling exercise activity made only 5 spelling mistakes all together, while the learners from the other group made 18 spelling mistakes. In the item-recognition assignment, the learners were asked to match the pairs of items presented by the nouns with the corresponding picture that the items refer to. The assignment resulted in approximately equal percentages of the recognized items, which means that the learners from both groups had the equal overall visual abilities.

The survey results showed that the learners dealing with the software were extremely satisfied with this method of English language learning, and that most of them are very eager to continue learning in that way. Only two learners expressed negative attitudes when asked how they liked the method, while the rest answered positively. The research was temporally limited to one English teaching school lesson; therefore the learner's satisfaction or dissatisfaction with the method could not be established by a descriptive type of survey question.

## 4 DISCUSSION

Implementation of multimedia computer technology within English language teaching may be observed as useful from different aspects. Learner's motivation is the crucial factor for acquiring a foreign language and new technology greatly contributes to both English language teaching and learning [1]. Today, the classical *ex cathedra* approach to teaching is being replaced by new, modern approaches, where all the participants actively cooperate while creating an educational community. Multimedia computer technology is definitely the call of the future, and its main function varies according to the span of its purpose. Regarding English language teaching, this technology enables higher level of teaching material individualization. In electronic form, and via the Internet, differently presented material can be easily available and adjusted to individual needs.

Moreover, computer technology saves a significant amount of time that is necessary for realization of various activities. For example, the spelling exercise activity, where the focus was on spelling, was more easily conducted with the learners dealing with the software than with the other group of learners. The software provides the exercise for each of the 8 verbs, and every learner can quickly go through all of them having an instant feedback on the correctness of their choice. On the other hand, the classic method does not temporally allow such combination to be conducted within an average lesson and with other activities included. The exercise equivalent to the spelling exercise activity was organized in a way that papers with letters were given to each group of 3 to 4 learners, and each group got only one word to compose. Therefore, the learners did not have the opportunity to go through all of the verbs comparing to those who had software, because a lot more time was spent on technical requirements – distributing papers, organizing the learners in groups, etc.

## 5 CONCLUSION

In this paper we presented the approach for teaching and learning English language vocabulary within the English language course lesson using multimedia educational software.

Each foreign language course, especially in elementary school, needs to have many components, the fundamental ones being a textbook and the teacher-learner and learner-learner interaction that takes place in the class. CALL materials on CD-ROM or accessed via the Internet definitely play a significant role as a third component.

Although extremely useful and popular worldwide, multimedia applications and resources for teaching and learning a foreign language in Croatian classrooms are still not used, but many teachers already explore the possibility of creating their own multimedia material. At the moment, advance in language teaching depends almost only on the autonomous efforts of teachers in their own classrooms, who explore principles and experiment with new techniques in creating CALL materials. When multimedia applications become a part of the foreign language classroom in Croatia, teachers will have to decide on how to integrate this material appropriately into the curriculum in order to achieve the desired learning outcomes.

In general, evaluative studies indicate that, for CALL materials to be effective, they must address specific learner needs and be fully integrated into the course structure in a way that is designed to meet its goals [2,3].

The aim of our research was to prove that the use of multimedia educational software for English language course additionally motivates learners to learn faster and get better results. Temporal factor and the motivation factor are the key factors that contribute to the usefulness of the approach we presented in this

paper. The greater the learners' motivation gets, the better the learners' knowledge acquisition becomes. From a teacher's point of view, the more time in the lecture has left, the more space for repetition the learners have. Computer technology reduces the time spent on technical requirements. While working on computers, the learners simultaneously go through the activities with the teacher and solve the exercises simultaneously with other learners. This approach enables the learners to have an instant feedback on their result, and to have a teacher not only as a model, but also as an active participant from their point of view.

## REFERENCES

- [1] Brussino, G. 1996. Developing a Multimedia Component For a Foreign Language Course (Occasional Paper No 7). Institute of Language Teaching and Learning, University of Auckland.
- [2] Gunn, C. 1997. Future directions for CAL evaluation. Association of Learning Technology Journal (ALT-J), 5(1), pp.40-47.
- [3] Gunn, C. 1997. Integrated multimedia for better language learning. ASCILITE 97. Available at: <http://www.ascilite.org.au/conferences/perth97/papers/Gunn/Gunn.html>
- [4] Sundberg, P. 1998. Animation in CALL: Learning to think in the fourth dimension, Paper Presented at CALICO'98 Symposium, California.
- [5] Turrini, G., Paccosi, A., & Cignoni, L. 2003. GLOBETROTTER: Words with their travel-bags. Educational Technology & Society, 6(3), pp.9-23. Available at [http://ifets.ieee.org/periodical/6\\_3/3.html](http://ifets.ieee.org/periodical/6_3/3.html) (ISSN 1436-4522)