IS A MULTIMEDIA BASED INTERACTIVE TABLE OF ENGLISH VERB TENSES A USEFUL TEACHING/LEARNING TOOL?

Tell me and I forget. Teach me and I remember. Involve me and I learn.
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Using multimedia and Web tools in TESL is becoming a sine qua non for teaching/learning grammar. We have developed a multimedia based interactive table of the English verb tenses and have applied it in teaching the English verb tenses. A research has been conducted into the level of acquisition of the Present Continuous Tense and the Present Simple Tense in two groups of students taught in different ways: a teacher directed method vs. computer based teaching which includes using the multimedia interactive table of English verb tenses. The results have shown that the students who were taught the English verb tenses in computer-based group reached better results.

Key words: multimedia, TESL, grammar, interactive table, research, teacher-directed method, computer based teaching

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1. INTRODUCTION

Some of us still remember language laboratories that were largely used for teaching foreign languages in the last century. A student with a headset was sitting in a booth, behind a desk, monitored by a teacher via a central control panel. The aim of the technology was to help students improve foreign language skills. "For instance, in the United States in the 1950s and 1960s, although other language teaching methods were practiced, the Audio-Lingual Method was clearly dominant. When Noam Chomsky challenged the view that language was a set of patterns acquired through habit formation, its influence began to wane..." (Larsen-Freeman, 2000:177) Actually, the methodology soon started to show drawbacks: the procedure was tedious, the interaction between students was none, and the one between a student and a teacher was negligible. New strategies in language teaching had to be thought of. People started to conduct research into new ways of TESL, which resulted in a number of innovative methods, such as the Silent Way (1972), Community Language Learning (1976), Total Physical Response (1977), Suggestopedia (1978), the Natural Approach (1983), Communicative Language Teaching (1980s), etc.

With the development of computer technology an interactive approach to TESL - the so-called computer assisted language learning (CALL) - started to be preferred. Garrett (1989), among others. was particularly interested in this area of research. He believed that computer technology had to be applied in the teaching process and he labelled the phenomenon as "*new humanism*".

Promoting CALL, Cameron (1999:4) said: *"The computer can be adapted to promote the traditional type of learning, but, at the same time, it also provides us with a unique opportunity for experimentation, within the framework of the curriculum, with new ways of imparting knowledge."* In a similar way, writing about benefits of using technology in the LOTE (Languages Other Than English) classrooms, Bond, et al. (2002:3) refer to Kost (1999): *"Using technology to implement a standards-based curriculum is highly feasible, and most LOTE teachers realize that students are more motivated to learn languages when an activity involves technology"*.

World Wide Web (WWW) based Interactive Language Teaching Tool (WILT) is another example of using the Web technology as a tool of TESL (Lieberman and O'Connor DiVito, 1994). It enables students and

teachers to take an active part in generating exercises on grammar issues and interact with Web applications which offer large databases to consult.

Living in a digital age, current students find it perfectly normal to be educated in a computerized environment. New technologies together with new methods of teaching are being applied: technology-based design, e-learning, virtual education, etc. Taking into consideration the fact that computers, being omnipresent, have modified people's lifestyle to the point that many of us cannot imagine our lives without computers, together with the latest trends in TESL based on ALL and WILT, we have developed a web based multimedia tool for teaching/learning English online. We have also tried to reach a high level of interactivity in order to be in accordance with the principles of the new Web 2.0.

We have conducted a research study to try to prove that using a software application in teaching certain English grammar issues can be a good way towards more successful TESL.

2. MULTIMEDIA

Multimedia is a global phenomenon which owes its success to its character: by integrating text, graphics, animation, digital sound and video it has become a powerful tool in all areas of human life. In his foreword to Lindstrom's *Brand sense: Sensory Secrets Behind the Stuff We Buy* (2005: xi-xii), Kotler says:

"…distinctive brands require something more. They have to be powered up to deliver a full sensory and emotional experience. It is not enough to present a product or service visually in an ad. It pays to attach a sound, such as music or powerful words and symbols. The combination of visual and audio stimuli delivers a 2 + 2 = 5 impact."

According to dual-coding theory (Paivio 1967; 1991) there is a theoretical justification for the use of visuals in the instruction. Human brain is much more apt to remember visuals than words because "visuals are more likely to be encoded redundantly than words" (Szabo and Kanuka, 1999:27)

Multimedia has great potentials in teaching: developing interactive applications (e.g. encyclopaedias, multimedia grammar lessons,

multimedia testing, interactive simulations, etc.), e-learning, setting up computer-based laboratories, etc. The development of multimedia goes hand in hand with the development of technology. We are beginning to realize that the potentials of multimedia are endless and depending mostly on one's needs, creativity, financial possibilities, etc.

Being a highly propulsive area of ICT, multimedia has been used for years, but only a small amount of its potentials has been used in TESL. A great deal of research (Chun and Plass, 1997, Armstrong and Yetter-Vassot, 1994; Huifen Lin and Tsuiping Chen, 2007) has been conducted into the area of multimedia application in TESL, whose results have shown that the performance of the students who were instructed by means of multimedia technologies was much better than that of those who were not.

TESL software applications can be divided into education oriented and fun oriented applications. The education oriented multimedia applications offer a more comfortable way of teaching/learning English. "In a metaanalysis of research on the use of multimedia to teach a variety of subjects, Ragan, Boyce, Redwine, Savenye, and McMichael (1993) found that, in general, multimedia instruction reduces learning time by 30% compared to traditional instruction. They further demonstrated that features of multimedia instruction such as learner interactivity and learner control over programs produce improved outcomes in achievement." (Nutta, 1998: 50)

As a combination of diverse media, it provides the possibility of offering instantaneous links to various data, the grammar issues being viewed and reviewed at the learner's own pace, assuring an immediate feedback pinpointing the errors committed by the student, which enables the teacher to get an insight into the difficulties the students encounter while being instructed on an issue, the interactivity and dynamics of applications used, etc. Finally, multimedia can make learning the English grammar fun.

3. MULTIMEDIA TABLE OF ENGLISH VERB TENSES
3.1. Rationale and technical underpinning

Encouraged by the above mentioned theories and findings and being aware of the world we are living in, we felt urged to introduce some innovations to TESL at the Polytechnic of Zagreb. In our practice of

teaching English as a second language we have often heard our students say: "*There are so many English verb tenses! It's a mess in our heads.*" In order to improve the instruction we generated a table of English verb tenses. Even though it was a static table at the beginning, based on the linear design principle, the students' reaction was positive. Some of them said: "*Now we can SEE the number of tenses and their division by time sections. It is much easier now.*" In spite of this enthusiasm provoked by the revealing character of the table, students continued making mistakes, especially regarding the tense aspect (Green and Hecht (1992) claim that aspect is one of the most difficult grammar issues for ESL students to acquire). That is why we decided to generate a more sophisticated tool – a multimedia based interactive table of English verb tenses.

Starting the project we were fully aware of the fact that good multimedia materials for TESL (with an emphasis on English grammar) should be generated according to some rules (they should be user-friendly, the level of difficulty should be adapted to students' needs, they should offer clear explanations, graphics and animations should be interesting, the voice input should be generated by native speakers, the feedback should be assured for both the student and the teacher, etc.).
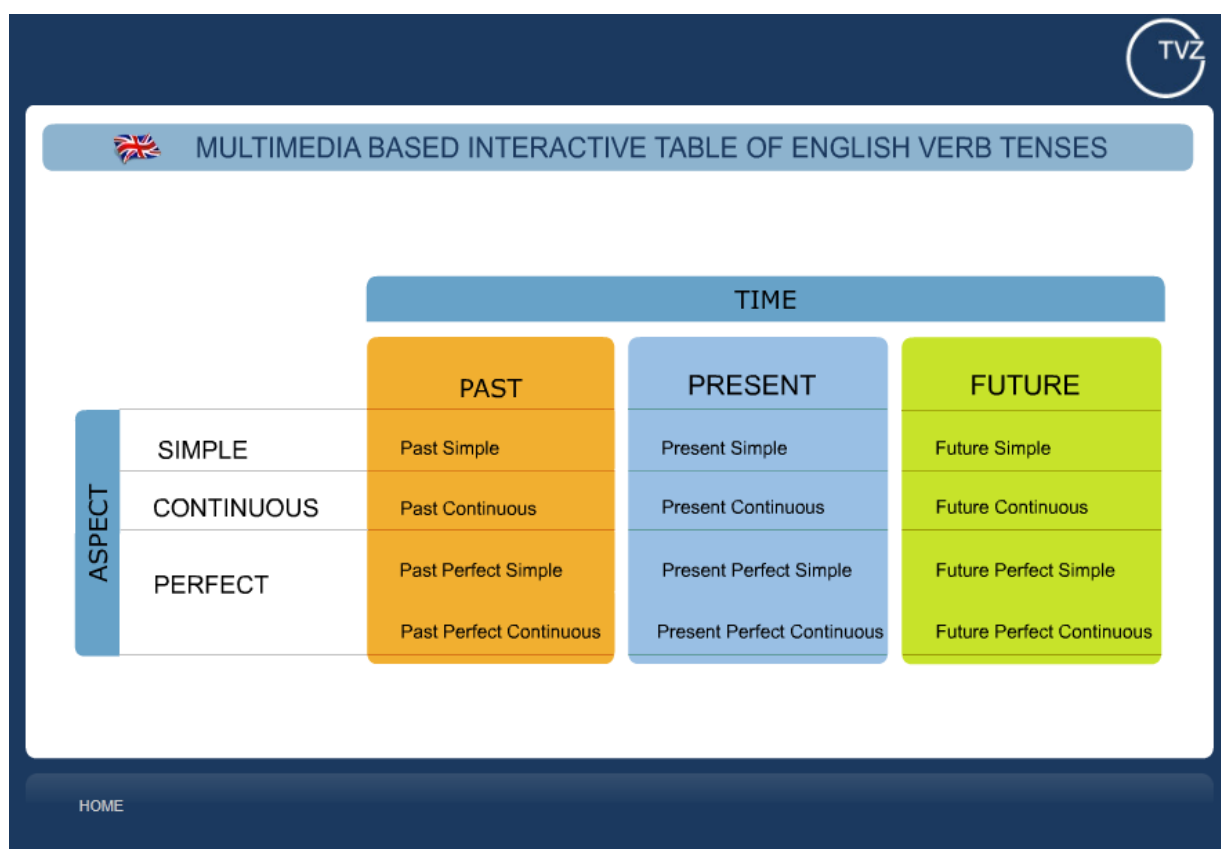
A number of theory-based models of user interface design of foreign language multimedia software have been proposed. Wallace and Anderson (1993) distinguish between four different types: craft approach, enhanced software engineering approach, technologist approach and cognitive approach. With no intention to minimize the relevance of these theoretical models, (the table is a part of a wider project called *LEO* – Learn English Online, which has been carried out by a group of students and teachers at the Polytechnic of Zagreb), we decided not to choose a model and work according to its principles because we thought that a single model would not meet our needs. We decided to adopt from each of them those aspects that would best suit our needs.

Guided by the wish to create, and not to replicate, first we conducted a detailed search on the Internet for TESL websites containing similar contents to get an insight into what is available online. After that the goal was defined: to develop an attractive website which is going to be a useful tool in teaching/learning ESL and available online for everybody.

Various types of software were used in generating this table: PHP, AJAX, MySQL, MS Word, MS Excel, JavaScript, Adobe Master Collection CS4, Flash, JQuery, etc.

3.2. Description of the table

The table is divided into three time sections: PAST, PRESENT, FUTURE. The tenses are divided according to the time section and the aspect: SIMPLE, CONTINUOUS, PERFECT. (Figure 1)

Fig.1: Multimedia based interactive table of English verb tenses

When you open this Web page the table starts to download slowly in order to demonstrate the logic of the verb tenses division: first you see TIME, then PAST, PRESENT and FUTURE; next the ASPECT opens for you: SIMPLE, CONTINUOUS, PERFECT. You can see clearly the points of intersection, which are the verb tenses.

Fig. 2: Present Continuous Tense

If you click point to Present Continuous a new Web page opens. The page contains the following items: the name of the tense, a sentence containing the tense, an animated picture and links: *Form*, *Use*, *Listen*(🔊), *Quiz*, *Game* and hyperlinks to some English teaching web pages (Fig. 2). In tenses where the regular/irregular character of the verb matters, there is an additional link: Irregular. The sentence for each tense contains a time adverbial, which is also a link. When it opens, it shows other time adverbials used in the same sentence. The *Form* link opens the page which shows the paradigms: Positive, Negative, Interrogative. The *Use* link opens the page which contains the explanations on how a tense is used. The *Listen* link opens the pronunciation of the tense forms generated by a native speaker. Leow (1995) thinks that audio input is of an extreme importance in such applications because it provides learners with the ability to notice unexpected sounds (novel inflections) at the end of familiar verbs. The *Quiz* link opens the page which offers a quiz (Figure 3). There is a fill-in-the-blank type and a multiple-choice type of quiz in which students should choose the appropriate verbal form. Each time they make a mistake they are warned by visual and sound effects. The same happens when they choose the right answer. If they make a

mistake, a new link is offered: *Help*. It leads students to the *Form* and *Use* links. This application assures the feedback not only for students, but also for teachers. The *Game* link opens the page which offers games (memory, puzzles, etc.) as an excellent and dynamic form of learning English.

Fig.3: Quiz

3.3. Purpose of the Research

The purpose of the study was to examine whether there was a difference in the acquisition of a specific grammar issue for students instructed in a teacher-directed class vs. those taught in computer-based instruction.

3.4. Method

The experiment compared the levels of proficiency in the English verb tenses of intermediate and upper-intermediate students in a

teacher-directed group vs. computer-based group. The first series of tests was carried out at the beginning of the instruction and the second at the end of the instruction. The research time included the instruction consisting of two hours, three times a week, over the period of a month, together with the testing, which was carried out twice.

3.4.1. Sample

The sample consisted of two groups of students at an intermediate/upper-intermediate level of the English language instruction. Taking into consideration the number of years (4-8) students had spent learning English before they enrolled in the Polytechnic of Zagreb, one would expect them to have mastered the English verb tenses. Unfortunately, the preliminary testing showed that most of them did not even have the basic knowledge. According to the test scores students were divided into groups: two groups at an intermediate level of proficiency and two groups at an upper-intermediate level of proficiency. The number of female students is rather small in every group, due to the fact that the study in IT at the Polytechnic of Zagreb is preferred by male students. It is also important to say that all lectures at the Polytechnic of Zagreb are given in computerized classrooms due to the nature of the study programmes carried out there and all students are computer literate.

3.4.2. Independent Variable

The method of teaching, either teacher-directed or computer-based, was the independent variable. The students were divided into groups, according to the level of proficiency in English – intermediate and upper- intermediate. Two groups, containing students at both intermediate and upper- intermediate level, were examined for the purpose of the study. The instruction consisted of two hours delivered three times a week, over the period of a month. The intention of the instruction was to get students familiar with the idea of English verb tenses and a general division of tenses in terms of time and aspect. The Present Simple tense and the Present Continuous tense were dealt with in detail (form, use, exercises). Since the English language curriculum at the Polytechnic of Zagreb requests that the instruction should be

partially content-based, a part of the instruction included studying the issues related to the field of expertise (ICT).

3.4.3. Teacher-Directed Group

There were 30 students (24 males, 6 females) in the group, 15 (10 males and 5 females) at an intermediate level and 15 (14 males and 1 female) at an upper-intermediate level of proficiency. They were all Croatians speaking Croatian as a native language. According to the curriculum a revision of the English verb tenses is supposed to be carried out during the first semester. We started with a general revision of the English verb tenses, paying special attention to time and aspect. The Present Simple and the Present Continuous tense were dealt with in detail. The teacher-directed methodology was applied (lectures, workbooks, textbooks with grammar exercises, grammar books). Depending on the level of proficiency in English, students used either the *Grammar in Use Intermediate with Answers: Self-study Reference and Practice for Students of English* (Murphy and Smalzer, 2010), or *A University Grammar Of English* (Greenbaum, Quirk, 2006). The instruction was carried out in traditional classrooms.

3.4.4. Computer-Based Group

There were 30 students (21 males, 9 females) in the group, 15 (9 males and 6 females) at an intermediate level and 15 (12 males and 3 females) at an upper-intermediate level of English proficiency. They were all Croatians speaking Croatian as a native language. According to the curriculum a revision of the English verb tenses is supposed to be carried out during the first semester. We started with a general revision of the English verb tenses, paying special attention to time and aspect. The Present Simple and the Present Continuous tense were dealt with in detail. The computer-based methodology was fully applied: the instruction was carried out in computer equipped laboratories where the multimedia based interactive table of the English verb tense could be used, both as a teaching and a learning tool. Not only was it used for teaching the tenses (form, use), but it was also used as a user-friendly learning tool available on the Internet all the time, both in school and at home.

3.4.5. Dependent Variables

The dependent variables were students' results on a pre-test, which was taken in the first week of the instruction, and an immediate post-test, which was taken a month after the instruction. The tests on the Present Continuous Tense and the Present Simple Tense contained the issues related to the form (positive, negative, interrogative) and use (with adverbials, in a context). They were accommodated to the levels of instruction. They contained (1) a fill-in-the-blank test (2) and a multiple-choice test.

Both tests included items covering the Present Simple and the Present Continuous tense. Here are some test items:

Fill-in-the-blank Test

Fill in the forms of the Present Simple and the Present Continuous tense:

works, goes, are watching, is

Every day my mother _____ to work on foot. She_____ in a bank. She _____ at home now. We_____ TV.

Scoring: 1 correct answer = 1 point

Multiple-Choice Test

Choose a correct verb tense form:

Listen! Mary_____! (sing)

   a) sings   b) sing   c) is singing

He always _____(carry) heavy bags.

a) carrys   b) carries   c) carry

Scoring: 1 correct answer = 1 point

3.5. Results

A small scale research was conducted into the level of students' acquisition of a particular grammar issue. Two different grammar instruction methodologies were applied. According to the results obtained, it seems that computer-based grammar instruction methodology is more effective than the teacher-directed one. This is completely in accordance with the findings of the scholars (McEnery et al., 1995; Nagata, 1996) who conducted research on second language grammar teaching. They claim too that the computer-based grammar teaching is more effective than the traditional way of teaching.

Table 1: *Mean test scores by group in pre-test and immediate post test*

Type of Test	Time of Test	Teacher-Directed Groups (N=30) Mean	Computer-Based Group (N=30) Mean
Fill-in-the-blank	Pre-test	2.93	2.73
	Immediate Post-test	3.33	3.73
Multiple Choice	Pre-test	2.77	2.83
	Immediate Post-test	3.17	3.63

Table 1 shows the students' pre-test and immediate post-test scores by the two groups: the teacher-directed and computer-based group. The analysis shows that in both groups the students' mean scores on the immediate post-test, on both fill-in-the-blank test and multiple choice tests, were higher than the scores on the pre-test. Even though there was no difference between the mean score achieved on the multiple choice test by students in both teacher-directed and computer based groups (2.77-3.17; 2.83-3.63), the computer-based group's total degree of test score improvement (32.37%) is higher than the degree of test score improvement in the teacher-directed group (14%).

A certain degree of difference can be seen between the teacher-directed and the computer -based group's mean score on the fill-in-the-blank test in the immediate post-test: the teacher-directed group's

immediate post-test mean score was 3.33 (pre-test; 2.93), and the computer based group's mean score was 3.73 (pre-test: 2.73).

There is also a difference between the teacher-directed group and computer-based group on the multiple choice test in the immediate post-test. The teacher-directed group's mean score was 3.17 (pre-test: 2.77), and the computer-based group's mean score was 3.63 (pre-test: 2.83).
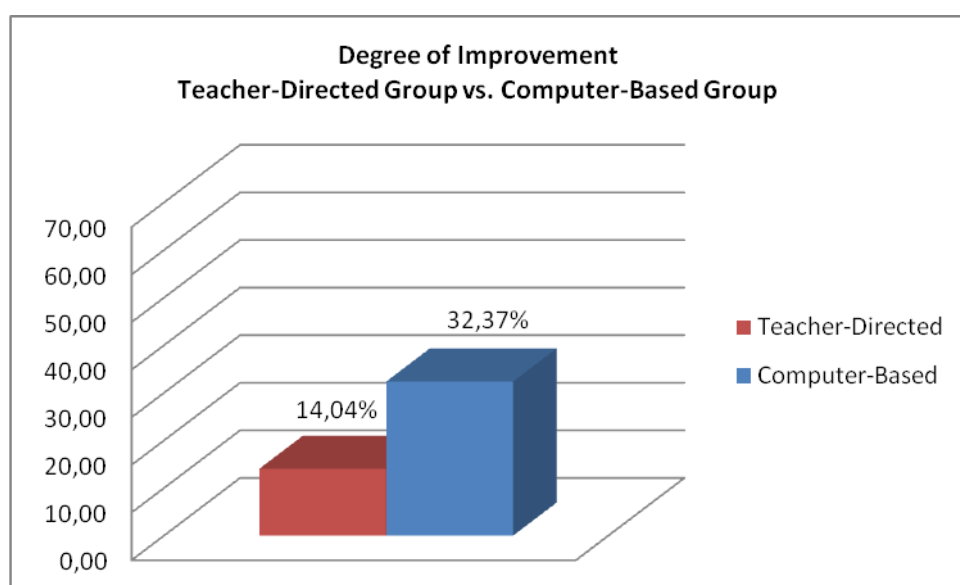

Fig. 4 Degree of improvement by Group

The total degree of improvement is noticeably higher in the computer-based group than in the teacher-directed group (Figure 4).

Table 2 shows the students' pre-test and immediate test mean scores by the two levels: intermediate and upper-intermediate. The analysis shows that the most obvious difference between the teacher directed group and the computer-based group's mean score is at the intermediate level: the computer-based group intermediate level students' mean score on the fill-in-the-blank test was 3.40 (pre-test: 1.93). At the same time the teacher-directed group intermediate level students' mean score on the fill-in-the-blank test was 2.67 (pre-test: 2.20). On the other hand, there was no major difference between the mean score achieved on the fill-in-the-blank test by students at upper-intermediate level in either teacher-directed or computer-based group (3.67-4.00; 3.53-4.07).

Table 2: *Mean test scores by level in pre-test and immediate post-test*

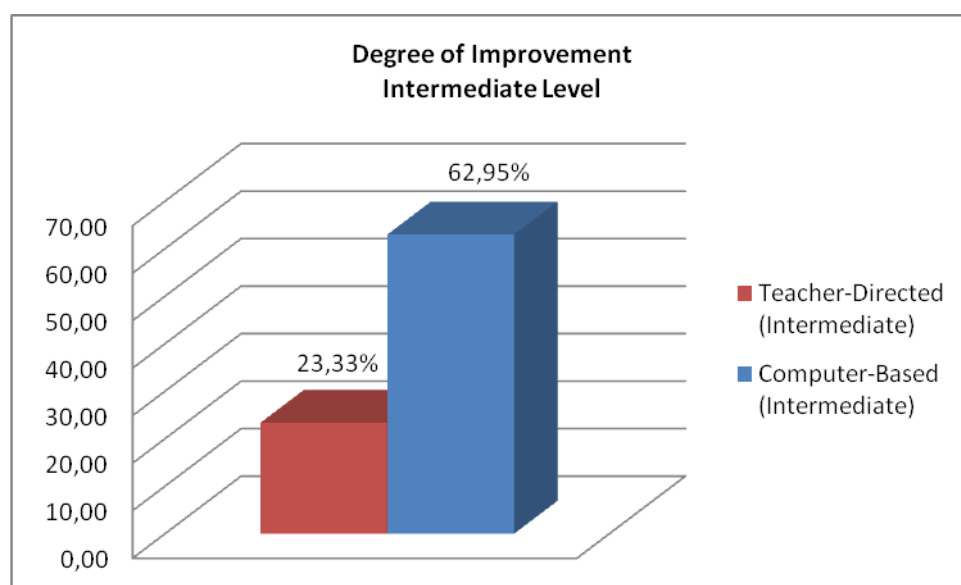| Type of Test	Time of Test	Teacher-Directed Group (N=30)		Computer-Based Group (N=30)	
		Intermediate Level (N=15)	Upper Intermediate Level (N=15)	Intermediate Level (N=15)	Upper Intermediate Level (N=15)
		Mean	Mean	Mean	Mean
Fill-in-the-blank	Pre-test	2.20	3.67	1.93	3.53
	Immediate Post-test	2.67	4.00	3.40	4.07
Multiple-Choice	Pre-test	2.13	3.40	2.20	3.47
	Immediate Post-test	2.67	3.67	3.33	3.93

Fig. 5 Degree of improvement Intermediate level

Figure 5 shows the degree of test score improvement at the intermediate level in both groups. The computer-based group students' test score

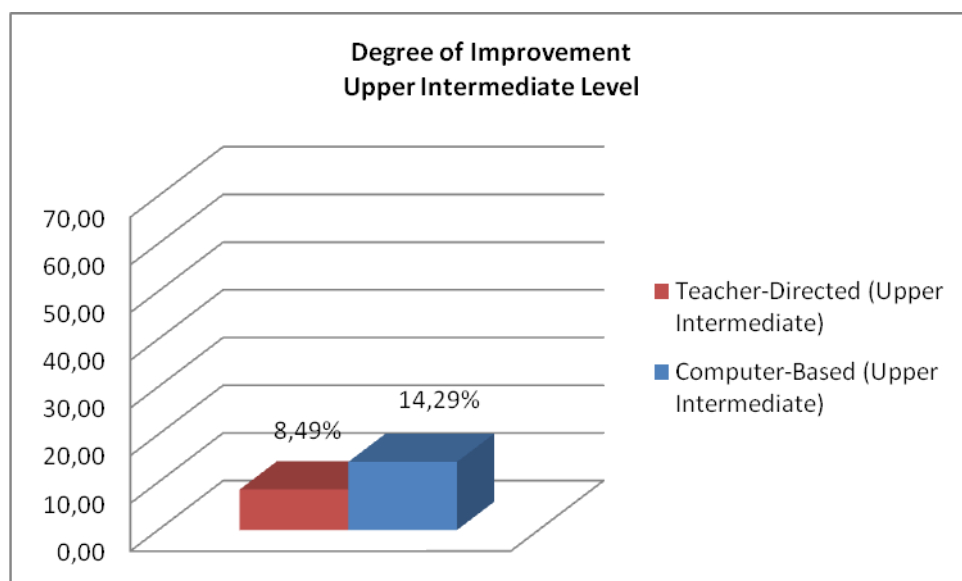improvement is much more evident than the test score improvement achieved in the teacher-directed group.

Fig. 6: Degree of improvement Upper intermediate level

Figure 6 shows the degree of test score improvement at the upper intermediate level in both groups. The difference between the degree of improvement in the teacher-directed and in the computer-based groups is not as large as at the intermediate level, but it is still indicative.

4. CONCLUSION

The multimedia based interactive table of English verb tenses has proved to be a useful teaching/learning tool. Although the sample was too small and the period of research was too short to be able to draw definitive conclusions, the results of the research, as limited as it was, reveal the fact that students who were taught the English verb tenses by means of this interactive multimedia table achieved better results than those taught in a teacher-directed way. The results of testing show that there are differences in the teacher-directed and computer-based groups' scores on the fill-in-the-blank tests, especially at intermediate level of students' proficiency. If the fill-in-the-blank tests demonstrate the level of students' proficiency in using certain grammar issues, does it mean that a computer software, such as the table, can enhance the development of the skill? A thorough research should be conducted with

different types of learners (age, occupation, reasons for learning a foreign language, etc.) and different types of ESL instruction (Professional English, General English, etc.) to be able to draw definitive conclusions.

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JE LI MULTIMEDIJSKA INTERAKTIVNA TABLICA ENGLESKIH GLAGOLSKIH VREMENA KORISTAN ALAT U PODUČAVANJU I UČENJU ENGLESKOGA JEZIKA?

Danas je uporaba multimedije i web alata u podučavanju engleskoga kao drugoga stranog jezika sastavni dio nastave . Izradili smo multimedijsku interaktivnu tablicu engleskih glagoskih vremena i primijenili je u nastavi. Proveli smo istraživanje o stupnju usvojenosti znanja i vještina u uporabi glagolskih vremena Present Continuous i Present Simple u dvije skupine studenata: u jednoj je bila primijenjena izravna metoda podučavanja (nastavnik-učenik), a u drugoj su studenti učili pomoću računala na kojima su koristili multimedijsku tablicu engleskih glagolskih vremena. Rezultati su istraživanja pokazali da su studenti koji su učili pomoću računala bili uspješniji.

Ključne riječi: multimedija, engleski kao drugi strani jezik, gramatika, interaktivna tablica, izravna metoda, učenje pomoću računala