# Student Teacher's of English Viewpoints Towards Computer Assisted Language Learning

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# STUDENT TEACHERS' OF ENGLISH VIEWPOINTS TOWARDS COMPUTER ASSISTED LANGUAGE LEARNING

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**ABSTRACT**

Studies so far have focused on the effectiveness of CALL technologies and learners' perspectives, while teachers' were given a scant attention. This paper reports on a study that examined Croatian student teachers' of English as a foreign language (EFL) viewpoints towards computer assisted language learning. The sample in this study consisted of 32 MA students of TEFL programme at the Faculty of Humanities and Social Sciences, University of Rijeka. The findings reveal that the major challenges of CALL are teachers' lack knowledge to use computers and similar technology, lack of will to learn the needed skills, lack of funds, absence of real communication, time-management (CALL is time-consuming), availability of necessary technology in schools, complaints from parents, learners' lack of knowledge to use computers, lack of support from school, and problem of successful integration of CALL with traditional testing and grading, while the perceived benefits are more interesting lessons, increased learners' motivation, the use of authentic materials, variety of resources and activities, immediate feedback, easier learning, and the use of language learning software. Overall, the student teachers' of English have positive attitudes towards CALL and are willing to use it in their future classroom, even though they have not had any formal training in this field. The results point to the importance of teacher education about CALL.

**Key words:** attitudes, computer assisted language learning (CALL), education, student teachers of English

**LIST OF ABBREVIATIONS**

**CALL** – computer assisted language learning

**TEFL** – Teaching English as a foreign language

**EFL** – English as a foreign language

**SLA** – second language acquisition

**CMS** – course management system

**EPOSTL** – European portfolio for student teachers of languages

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## 1. Introduction

Computer assisted language learning refers to the use of computers in the language classroom. It can be a valuable asset at all levels of education, and it can be used in many different ways to facilitate learning processes, as well as reinforce what has already been learned, or it can serve as an additional support for those learners who need it (Levy, 1997). Teachers should be able to recognize learning situations in which use of computer could be beneficial for learners, and know how to effectively use them in their teaching practice because CALL can make language learning more authentic, interesting and fun (Klickaya & Seferoglu, 2013; Lei, 2009). Teachers of English are expected to use various ICT resources in their classroom which are appropriate for their learners, as well as be able to advise learners on how to find and evaluate appropriate ICT resources. Furthermore, they are expected to design their own ICT material and activities, and supervise and assist learners' use of different forms of ICT both in and outside the classroom (Newby, Allan, Fenner, Jones, Komorowska, & Soghikyan, 2007).

In line with these views, this thesis aims to investigate Croatian student teachers' of English viewpoints towards the use of CALL. The participants of this study are students of the fourth and the fifth year of the MA in Teaching English as a Foreign Langauge programme at the University of Rijeka. I believe that their viewpoints towards CALL are of great value because they will possibly use computers in their future classroom, which is why I wanted to look into their attitudes and overall experience with CALL.

In order to examine Croatian student teachers' of English viewpoints towards CALL, this thesis aims to answer the following research questions: what are Croatian student teachers' of English attitudes towards CALL, what are the perceived challenges of CALL, what

are the perceived benefits of CALL, for which purposes should CALL be used in language classroom, are Croatian student teachers of English willing to use CALL, and do they have any experience and formal training in CALL. The study hopes to gain insight into Croatian student teachers' of English viewpoints towards the use of CALL in their future classroom in order to investigate their willingness to use it, i.e. to examine whether CALL has a prospective future in EFL teaching in Croatian schools. However, it should be noted that the study was conducted on a small number of participants of only one university in Croatia which means that the result may not be applicable to the overall population of Croatian student teachers of English.

The thesis is divided into two main parts. In the first part, the theoretical background on the subject of computer assisted language learning is given, as well as relevant findings about the field, while in the second part the analysis of the results of the study is given together with the discussion and practical recommendations. The first part begins with a definition of CALL, and then offers a historical overview and phases of CALL. Technologies which can be used in CALL and their effectiveness when it comes to language teaching and learning are then given. Following CALL technologies, results of the studies so far about teachers' perspectives on CALL are presented. In the second part motivation for this study is explained, as well as methodology and the analysis of the results which are then compared with the results of the relevant studies in the field.

## 2. What is CALL?

CALL is a field of research and practice which is at the same time both exciting and frustrating because it is dynamic, complex, and it is changing quickly. It may be defined as "the search for and study of computer applications in language teaching and learning" (Levy, 1997: 1). CALL encompasses a wide variety of information and communication technologies applications and approaches to teaching and learning foreign languages (Levy, 1997). Therefore, CALL refers to any process in which learners improve their foreign language competence with the use of computers, smart phones, tablets, MP3 players, and consoles (Scott & Beadle, 2014).

In the early stages of CALL development, applications were mainly focused on narrowly defined solutions for vocabulary training, text manipulation, dialogue practices and grammar exercises, but developments in multimedia telematics, especially the integration of multimedia processing and distance communication, have considerably increased opportunities for the use of computers for the purposes of language teaching and learning. Multimedia processing enables learners to engage with learning material which is suitable for their age and level of proficiency, "from listening and speaking in real-life dialogue situations to specialized reading and writing, from experiencing communicative events to grammatical practice and testing", while distance communication allows learners to communicate with tutors and other learners, and to access various multimedia materials online (Kohn, 1995: 10).

According to Scott and Beadle (2014), CALL includes:

- Authentic foreign language material, such as video clips, flash-animations, web-quests, pod-casts, web-casts, and news etc.;

- Online environments where learners can communicate with foreign language speakers, through email, text-based computer-mediated communication (synchronous and asynchronous), social media, or voice/video conferencing;
- Language-learning tools (online apps or software), such as for phonetics, pronunciation, vocabulary, grammar and clause analysis, which may include a text-to-speech function or speech recognition, and often includes interactive and guided exercises;
- Online proprietary virtual learning environments, which offer teacher-student and peer-to-peer communication;
- Game-based learning.

The abovementioned technologies have spread across many language classrooms over the past several years. Today, many textbooks come with a CD-ROM and a companion website with various online learning materials. Also, some textbooks which are supposed to be used with online materials in a learning management system that is maintained by the publisher, and teachers, i.e. course instructors, may have a Moodle (e.g. MudRi) course set up (Chapelle, 2010). Technology develops rapidly so all users of CALL should try to continuously renew their skills and knowledge in order to keep pace with those changes (Hubbard, 2009).

## 3. History of CALL

The rapid advancement of technology has brought many novelties and has changed the way many professions operate. Language teaching is one of the professions where computers and use of information and communications technology can provide additional support both for teachers and for learners. With increased use of computers in our everyday lives and increased need for computer literacy, it has only been a matter of time before incorporating them into language classrooms.

As Molnar (1997: 63) stated, "the history of computers in education has been variously characterized as an "accidental revolution" or "unthinking man and his thinking machines." However characterized, it is clear that innovators in this field have created some of the most provocative and stimulating ideas in the history of education." What follows is a brief chronological history of CALL throughout decades with emphasis on the representative CALL projects of each decade, as well as their connection to English language teaching approaches and methodology. Let us now take a look at the most significant projects and their impact on language learning/teaching

### 3.1. CALL in the 1960s and the 1970s

CALL's origins can be traced back to early 1960s (Davies, n.d.) when audio-lingual approach to language teaching was most commonly used. According to Warschauer (1996), the first phase of CALL was based on the then dominant behaviorist theories of learning which are characterized by repetitive language drills, i.e. drill and practice. At that time, software developers realized that drill and practice exercises, which were the main characteristics of the audio-lingual approach, were easily programmable on computers. Computers are ideal for carrying out repeated drills because machines cannot get bored

while presenting the same task all over again, and because they can provide non-biased feedback. What is more, students are allowed to solve tasks at their own pace which means that they are able to adjust learning materials to their own needs and their level of knowledge.

This has led to the development of two prominent computer-assisted instruction (CAI) projects – the PLATO (Programmed Logic for Automatic Teaching Operations) project and TICCT (Time-shared, Interactive, Computer-Controlled Information Television) project both of which were used for language instruction, as well as other subjects (Levy, 1997).

### 3.1.1. The PLATO project

The courseware developed for PLATO project offered audio (input to learners), graphics, and response analysis, and it was a product of language teachers' efforts to design the best supplemental course materials possible (Chapelle, 2001). The PLATO system used an approach that provided learners with practice materials targeted at their assumed level of knowledge. It also provided learners with feedback and remediation when necessary (Hubbard, 2009). However, work on the system had no consistent positive or negative effect on students' achievement (Levy, 1997).

### 3.1.2. The TICCIT project

The TICCIT project combined computer and television technologies to present examples and instructions. It was also one of the first instructional software which promoted learner autonomy because students were able to freely move throughout the courseware, i.e. they were able to skip ahead or go back and repeat already solved tasks (Davies, Otto, & Rüschoff, 2013). The results of the analysis of the TICCIT project showed that there was a significant performance advantage compared to that of students in conventional classes;

however, teacher and student attitudes were not as positive largely due to some students' difficulties in managing their own instruction (Levy, 1997).

### 3.2. CALL in the 1980s

CALL became popular alongside with the development and spread of personal computers in the early 1980s (Hubbard, 2009). Throughout the 1980s, behaviourist approaches to language learning and teaching were being rejected at the pedagogical and theoretical levels, which led to the emergence of communicative language teaching. During that decade, significant changes occurred both in theories of language and in computing, such as the Communicative Language Teaching approach, the invention of the microcomputer and the appearance of the first serious educational applications (Levy, 1997).

The early 1980s saw a boom in CALL due to the introduction of the microcomputer which allowed motivated language teachers to write simple CALL programs, i.e. to design material from scratch using a high-level programming language such as BASIC. Other language teachers used authoring programs such as Storyboard, authoring systems or authoring languages to produce CALL materials. In addition to developing CALL materials, teachers' role was to incorporate those materials successfully into their language classroom, and to use them effectively with their students (Levy, 1997).

#### 3.2.1. Storyboard

Storyboard is one of the most popular authoring programs of the 1980s (Levy, 1997). It is a flexible text reconstruction program based on a simple principle: "a short text (up to 2000 characters) is entirely obliterated on the screen, every letter of each word being replaced by a small "blob," leaving only the title, punctuation, numbers, and spacing intact.

The student has to restore it by guessing single words. When a word is found, it is printed in empty place (“blob”), wherever it occurs in the text (ESL Software, 2016).

According to ESL Software (2016), Storyboard offers a great variety of different uses and caters to different learning styles. Students can ask for difficult words, previously selected by the teacher, to be given at the start, ask for hints (for words determined by teacher), ask for any letter of any word provided, ask for any whole word to be provided, guess prefixes and suffixes, save an incomplete exercise and resume later, and see the whole text at any time (option can be switched off at any time by the teacher).

Storyboard can be used with any kind of text: course material, newspaper articles, business letters, or songs. In addition to vocabulary, the text reconstruction involves knowledge of grammar, cohesion, and stylistic features (ESL Software, 2016).

### 3.2.2. The Athena Language Learning Project

The Athena Language Learning Project, launched in 1983, was a joint project of MIT, Digital Equipment Corporation, and IBM focused on integration of computers into the curriculum. The aim of the project was to develop computer-based learning tools that can be used in language classrooms. The materials developed within the Athena Language Learning Project were meant to supplement a normal course sequence, to replace the time spent with a textbook or an audio tape, but not to replace classroom time. What is more, a part of the project was the development of a demonstration project with interactive video and an intonation-practice system. Included in the system was a series of error routines for recognizing spelling mistakes, typos, incorrect grammar, and culturally incorrect or semantically incoherent statements (Kramsch, Morgenstern, & Murray, 1985).

The materials developed as part of the Athena Language Learning Project were based on the sociolinguistic theory according to which "the linguistic competence is a subset of a more general discourse competence that includes the ability to express, interpret, and negotiate meanings within the social context of interpersonal interactions" (Kramsch, Morgenstern, & Murray, 1985: 32).

### 3.3. CALL in the 1990s

In the course of the 1990s the use of information and communication technologies in language teaching and learning became firmly established, and CALL began to reach a wider audience. The World Wide Web (WWW) was established for the wider public in 1993 with the launching of the first web browser, and it is probably one of the most significant developments in information and communication technologies (Davies, Otto, & Rüschoff, 2013).

In the early stages, the WWW was used mainly to locate different resources, and the Web interactivity was limited to discussion lists and forums. Teachers' demand for authoring tools used for the development of interactive materials on the Web led to the development of applications such as Hot Potatoes. The Hot Potatoes enables the creation of multiple choice questions, gap-filling and matching exercises, jumbled sentences, crosswords and short text entry exercises (Davies, Otto, & Rüschoff, 2013).

#### 3.3.1. The International Email Tandem Network

The International Email Tandem Network was initiated in 1993 by Helmut Brammerts, and it served for language learning by computer-mediated communication using the Internet. Students from universities from all over the world could learn languages together via e-mail. In addition, the Tandem Network also had a bilingual forum, where

students could take part in discussions and offer advice regarding the target language. The data base was easily accessed and students were able to obtain and add teaching materials (Levy, 1997).

There are two main principles behind tandem learning: reciprocity and autonomy. The first principle, reciprocity, means that all partners benefit from collaboration with native speakers of their target language. Tandem learning leads to the second principle, autonomy, because it demands from students to take more responsibility for their own learning than in a traditional classroom (Markus, 2013).

### 3.3.2. The CAMILLE

The CAMILLE (Computer-Aided Multimedia Interactive Language Learning) project involves communicative approach to language acquisition, which offers beginner courses in Dutch and Spanish, and advanced courses for French to. The tools used in the CAMILLE project include a "textbook of learning activities, a grammar, a dictionary with recordings of a native speaker saying the words, audio and video recordings, a book on the culture of the target language, and a notebook "(Levy, 1997: 34-35).

The target audiences of the CAMILLE project include students in science or business, and technicians or engineers. Over 40 hours of multimedia exercise and activities which are highly structured and interactive are encompassed into the CAMILLE project. Some of the activities are concerned with the general knowledge regarding getting information, asking for shelter, buying food, and what is generally known as business skills – making calls and appointments, writing a business letter. The emphasis is on the acquisition of the communicative competence (Ingraham, Chanier, & Emery, 1994).

### 3.3.3. The OLA

The OLA (Oral Language Archive) was initiated in 1994 with main goal to gather a collection of digitized sound recordings for learning foreign languages, which would then be available on the Internet so learners would have easier access to authentic materials. The sound archive and tools enable users to use and locate sound segments easily because stored recordings are segmented and coded according to different categories, which allow users to search the archive by language, gender of speakers, grammar, functions, topic, level of formality and complexity, subject keywords, and lexical difficulty (Levy, 1997).

### 3.3.4. E-learning

In recent years, E-learning has become a widely recognized tool in education and it is becoming even more popular because it is not constrained by geographic positions and it is less expensive that traditional education. It also gives learners flexibility in what they learn and they learn it. Electronic learning refers to use of electronic devices and digital media in education. It became popular in the late 1990s, when there was an explosion of virtual learning environments which proved to be extremely useful in presenting teachers with tools to create and maintain online courses with the possibility of teacher-learner communication and peer-to-peer communication (Davies, Otto, & Rüschoff, 2013).

The expansion of the Web led to more efficient internet connectivity which increased the use of the applications by language teachers and students by offering more interesting possibilities, such as Multi-user domains and Multi-user domains object oriented which were designed as text-case, role-playing exploration games (Stockwell, 2012).

### 3.4. CALL in the twenty-first century

Significant changes have taken place since the early 2000s when there was an enormous growth of Web-based communities. These included various online forums used to facilitate communication among people with similar interests and needs, as well as portals designed for different interest groups. As a result, more and more users started to take active part in online discussions such as blogs, lists, wikis, podcasts, as well as in social networking websites, virtual words, and different programs that promoted collaboration, sharing, and interaction. However, it is important to note that, by this time, it was clear that the self-study without guidance and integration was not possible because Web-based activities for self-study could not entirely substitute classroom experience. On the other hand, they could be used as additional tools that support and expand the language learning process (Thomas, 2009). Hence, teachers should take part in education about Web-based activities in order to efficiently integrate them into their language classroom.

## 4. Phases of CALL

Warschauer (1996) identified three phases of CALL based on the pedagogical and methodological approaches which reflected the general trends in language learning. These phases were also based on the historical development of CALL, and they encompassed projects discussed in the previous chapter, as can be seen in Figure 1. Each phase of CALL was connected to English language teaching approaches which were popular during the period each phase of CALL referred to.

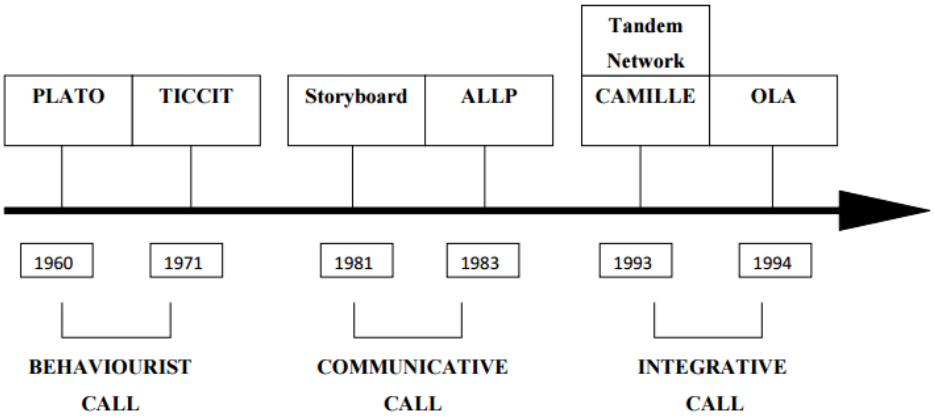


**Figure 1 Historical line of CALL**

### 4.1. Behaviourist CALL

Behaviourist CALL, conceived in the 1950s, was based on the dominant behaviorist theories of learning of Skinner. This phase of CALL featured repetitive language drills where computer served as an excellent mechanical tutor which never grew tired and allowed students to work at an individual pace. The rationale behind the behaviorist CALL is:

- repeated exposure to the same material is beneficial and essential to learning,
- a computer is ideal for carrying out repeated drills (computer does not get bored with presenting the same material),
- non-judgmental feedback,
- a computer can present materials on an individual basis (Warschauer, 1996).

By the late 1970s and early 1980s, behavioristic approaches to language learning had been rejected at theoretical and pedagogical level, these changes, with the introduction of microcomputer, lead to the new stage of CALL (Warschauer, 1996).

### 4.2. Communicative CALL

Communicative CALL emerged in the 1970s and was based on the communicative approach to teaching. Proponents of this approach thought that drill practice programs of the previous decade did not allow enough authentic communication (Warschauer, 1996).

Underwood (1984: 52) proposed a series of premises for Communicative CALL:

- focus on using forms rather than on the forms themselves,
- implicit grammar teaching,
- students are encouraged to generate original utterances rather than just manipulate prefabricated language,
- students are not evaluated for everything nor are they rewarded,
- flexible to a variety of student responses,
- target language is used exclusively in an environment where using the target language feels natural.

Taylor and Perez (as cited in Warschauer, 1996) proposed three different models of communicative CALL. *Computer as tutor model* is based on the premise that a computer is the knower of the right answers in programs used for language teaching (paced reading, text reconstruction, language games). The purpose of the CALL activity in the *computer as stimulus model* is to stimulate students' discussion, writing, or critical thinking. The third model, *computer as workhorse* empowers the learner to use or understand language rather than just providing language materials (e.g. word processors, spelling and grammar checkers, desktop publishing programs).

What followed is teaching in a more integrative manner, for example using task-based or project-based approaches, which led to emergence of the integrative CALL (Warschauer, 1996).

### 4.3. Integrative CALL

Integrative CALL is based on two important technological developments: multimedia computers and the Internet. Multimedia technology allows a variety of media, such as text, graphics, sound, animation, and video, to be accessed on a single computer, and hypermedia allows those multimedia resources to be linked together and integrated into learning materials. Also, hypermedia provides learners with a more authentic learning environment (listening is combined with seeing), the four skills are easily integrated, and students have a greater control over their learning. Hypermedia facilitates a focus on the content, without sacrificing a focus on language form (Warschauer, 1996).

One of the greatest advantages of using the Internet in language learning is that students can find authentic materials from all over the world within a few minutes – newspapers articles, magazine articles, radio broadcasts, short videos, movie reviews, book excerpts exactly tailored to their personal interests. The Internet also allows users to share brief messages, as well as documents (thus encouraging collaborative writing), and also graphics, sounds, and videos (Warschauer, 1996).

It should be noted that the introduction of a new phase of CALL does not necessarily entail complete rejection of the programs and methods of a previous phase, but it rather incorporates them and improves them. In the following chapter description of the most significant technologies used in CALL will be given, as well as their impact on language learning.

## 5. Technologies used in CALL

In this section we will look at the most significant technologies used in CALL and their implications for language learning. In particular, we will discuss advantages and disadvantages of each technology based on the evidence found so far. Let us now take a look at some of the most popular CALL technologies and their impact on language learning.

### 5.1. Course management System

A course management system (CMS) is defined as a collection of software tools which provide an online environment for course interactions, such as an area for faculty posting of class materials (course syllabus, handouts, etc.), an area for students posting their papers or other assignments, a gradebook, an integrated e-mail tool which allows participants to send announcement e-mail messages to the entire class or part of a class, a chat tool for synchronous communication among class participants, and a threaded discussion board for asynchronous communication among participants (Course management systems, n.d.).

A study conducted by Sanprasert (2010) investigated the effect of CMS use on language learner autonomy in a blended learning situation involving the integration of a CMS into o traditional face-to-face English classroom in Thailand. The results showed that learners who used a CMS became more independent and more confident in their learning, which led to the conclusion that CMS use can help to develop a learner's sense of autonomy. However, both Sanprasert (2010) and Kvavik (2005) warn that the effectiveness of a CMS is strongly dependent upon the interactive features used by the teacher, such as sharing materials with students, providing students with feedback, and online reading.

### 5.2. Interactive whiteboard

An interactive whiteboard is an instruction tools which consists of a computer, a projector, and a display panel (wall-mounted touch-sensitive screen). It adds interactivity and collaboration into the classroom. Some of the features available when using an interactive board are adding annotations, highlighting text, adding notes and drawings which can be saved and printed out and shared to the whole class, showing pictures or educational videos, and incorporating authentic content available on the Internet into the classroom lessons (What is an interactive whiteboard?, n.d.).

In spite of their increasing popularity, no studies so far have reported positive or negative impact of the interactive whiteboard on learning outcomes. However, there is some evidence that the use of an interactive whiteboard improved student's ability to memorize material, promoted independence in learning, and encouraged more practice, as well as active learning (Golonka, Bowles, Frank, Richardson, & Freynik, 2014). What is more, Tozcu (2008) reports that the use of an interactive white board increases students' enthusiasm, interest, and involvement in learning process.

### 5.3. e-Portfolio

An e-Portfolio is a digital collection of student work created by learner, which records evidence of learner's experiences, progress, achievement, self-reflection, and supports learner autonomy and self-assessment, as well as emphasizes the process of learning (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

A study conducted by Little and Perclova (2001) showed a mixture of advantages and disadvantages of using e-Portfolios in the language classroom. The teachers reported that maintaining e-Portfolios was time consuming, and that students were neither motivated

nor willing to continuously use the technology. On the other hand, learners said that e-Portfolios helped them with self-assessment, i.e. with reflection on their language abilities and knowledge.

### 5.4. Corpus

A corpus is a collection of authentic materials, such as language in spoken form, written form, or both, which provides learners and teachers with access to rich, authentic input, and enables broad access to linguistic data (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

Studies about corpora and their effect on language learning showed both positive and negative aspects of their use. Farr (2008) reported that some students thought that corpora proved to be beneficial to their language learning, but some learners expressed their concern about level of technological skills needed to use corpora effectively, as well as the amount of time required to use a corpus adequately. Learners also stated that the use of corpora increased language awareness and awareness of context, and improved their knowledge of lexicogrammatical rules (Liu & Jiang, 2009).

### 5.5. Electronic dictionary

An electronic dictionary is a dictionary in electronic form, either handheld or available online. It allows learners to speed search for a lexical item which does not greatly interrupt the reading process (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

Studies investigating how the use of electronic dictionaries affects language learning have shown different results. When it comes to speed of completing reading tasks, users of electronic dictionaries were faster than those learns using paper dictionaries

(Koyama & Takeuchi, 2007). In contrast, a study conducted by Koyama and Tekuchi in 2007 showed no difference in time needed to complete a reading task when comparing users of two different types of dictionaries.

In regards to the rate of retention of looked up words, Laufer and Hill (2000) found no evidence that frequent look-ups increased retention of those words, but Koyama and Takeuchi (2004) found evidence in favor of paper dictionaries, i.e. retention was significantly better for users of paper dictionaries.

Loucky (2005) investigated the effect of electronic dictionaries on learners' attitudes toward reading in a foreign language. The results show that learners would rather use electronic dictionaries rather than paper ones. Also, they have a more positive attitude and more willing to read in a foreign language if using electronic dictionary. Conversely, Koyana and Takuchi (2004) found no preferences for electronic or paper dictionaries amongst participants of their study.

### 5.6. Electronic gloss or annotation

An electronic gloss or annotation is a method of reference (usually in the form of a hyperlink) that can be used while reading an electronic text, and it allows learners to efficiently look-up unknown words. It also facilitates reading comprehension, and intentional and incidental vocabulary learning (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

Learners' attitudes towards electronic glosses or annotations are positive. Students found annotations to be useful, liked the hypermedia reading environment, thought it to be enjoyable and useful (Ariew, & Ercetin, 2004), and felt that glossed word led to faster reading (Chun, 2001).

### 5.7. Intelligent tutoring system (ITS)

An intelligent tutoring system is a program that serves as a tutor by providing direct, customized instruction, as well as immediate, specific feedback to a learner. It consists of four components: an interface, an expert model which is a domain of knowledge the learner is expected to acquire, a student model which stands for current state of student's knowledge, and u tutor model which provides appropriate feedback and instruction (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

The use of an ITS resulted in an average 83% reduction in seven errors common to learners of English as an L2. The seven error types included pseudo-passive, ergative construction, tough movement, existential construction, malformed expressions of feelings/reactions/states, missing copula, and finite/nonfinite verb confusion (Dodigovic, 2007). Furthermore, computer feedback proved to be more efficient than traditional feedback when it comes to verb-particle acquisition (Nagata, 1993).

### 5.8. Grammar checker

A grammar checker is a program designed to evaluate a text in terms of grammaticality and spelling errors. It provides learners with immediate input and feedback (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

Studies have shown that learners need explicit training in use of grammar checker to use them adequately and effectively (Jacob and Rogers, 1999; Burston, 2001).

### 5.9. Automatic speech recognition and pronunciation program

An automatic speech recognition and pronunciation program allows a computer to identify and process the words a person speaks into a microphone, which enables the

computer to compare student's pronunciation with a target pronunciation. This enables learners to practice their speaking abilities at a self-selected pace, with feedback available at any given time (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

Studies so far have shown promising results in helping learners improve their pronunciation with use of programs that record student speech and acoustically analyze it, i.e. compare the learner's pronunciation and prosody to a sample of a native speaker (Carey, 2004; Hardison, 2004).

### 5.10. Computer games

Two types of games can be beneficial when it comes to language learning – virtual word game and serious game. A virtual word is a program that allows learners to navigate through a 3D environment using their avatar. A 3D environment can be modeled after target language locales, meaning it can also include culturally relevant objects. In a serious game, whether it is a virtual environment game or a traditional computer game, learners have a specific goal or set of goals to achieve, but their activities are guided or restricted by the program itself (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

According to Golonka, Bowles, Frank, Richardson, and Freynik, studies have found no clear evidence that virtual world games are more effective than forms of traditional classroom learning or any other form of distance learning (2014). DeHaan, Reed and Kuwada (2010) reported that video game players acquired less target vocabulary than students who just watched the same game, possibly due to the cognitive load required to play the game successfully. However, Chen and Yang (2012) reported that video games can provide useful input to help college learners enhance their listening and reading skills, their vocabulary and learning motivation.

### 5.11. Chat

Chat, a form of synchronous computer-mediated communication, enables communication between students or between students and native speakers, without constraints of distance or location (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

Spanish learners who practiced their pragmatic skills using written chat produced a more complex output with a wider scope of pragmatic strategies than those students who used voice chat or face-to-face discussion (Sykes, 2005). Additionally, according to Kern (1995), learners are more willing to communicate through chat than in face-to-face communication in classroom, and that in chat communication students tend to use more complex sentences and morphosyntactic structures.

### 5.12. Blog

A blog is a web application that supports personal journaling or blogging, and at the same time enables feedback in the form of comments on blog posts. What is more, it encourages collaborative learning (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

According to Armstrong and Retterer (2008), significant improvements in terms of accuracy of verbal morphology and extensive production have been noticed in written works of those learners' who wrote blog entries. Also, students said that they preferred online blogging to traditional journals, that posting their written work online was motivating, and that blogging, in the end, improved their writing skills.

### 5.13. Wiki

A wiki is a website that allows users to add and update content, and is, in the end, created mainly by a collaborative effort of the site visitors (Christensson, 2006). As such, it

provides a solid ground for collaborative learning. Results of the study by Su and Beaumont (2010: 417) suggest that "a wiki can promote effective collaborative learning and confidence in formative self and peer assessment by facilitating rapid feedback, vicarious learning through observing others' contributions and easy navigation and tracking facilities". Some difficulties that students have encountered include problems with access to a wiki, and possibilities of plagiarism.

### 5.14. Mobile and portable devices

Tablet personal computers, personal digital assistants (PDA), iPods, and cell phones or smartphones can also be used in language teaching. All of the mentioned mobile and portable devices can provide internet access and run software for language learning, as well as facilitate teacher-student and student-student communication during remote learning activities (Golonka, Bowles, Frank, Richardson, & Freynik, 2014).

### 5.15. Computer assisted learning software

There are numerous benefits of well designed CAL software. These benefits range from personal to organizational. CAL software is applicable in many different ways, from personal one-off tuition to nationwide training of staff via a network. Additional, materials may be used as the very teaching medium, or in association with lecture, journals and textbooks (Kelly & Hill, 1995).

This concludes the most significant technologies used in CALL and their effectiveness in terms of language learning. The next chapter will provide insight into teachers' perspectives on CALL.

## 6. Teachers' perspectives

Studies so far have shown that teachers' attitudes have a significant impact on the use of computers in the classroom (Atkins & Vasu, 2000; Kim, 2002). Additionally, their personal beliefs about advantages of using technology for language teaching can also influence their decision regarding technology use in the classroom (Lam, 2000). Kim (2002) pointed out that teachers' perception and attitudes can be either a facilitating or inhibiting factor when deciding if CALL should be implemented into their classroom. Furthermore, teachers' confidence and overall interests in using computers are important factors that might promote CALL integration in the classroom (Redmond, Albion, & Maroulis, 2005). Another factor which influences teachers' attitudes towards CALL is the availability of technology infrastructure and resources (Pelgrum, 2001; Norris, Sullivan, Poirot, & Soloway, 2003; Peneul, 2006).

Research has also focused on the EFL teacher's attitudes towards the use of ICT in a language classroom. Overall, teachers had positive attitudes towards the use of computers (Aydin, 2013; Bordbar, 2010; Kim, 2011; Park & Son, 2009). Similarly, Albilirini (2006) investigated attitudes of high school EFL teachers toward information and communication technologies and concluded that they had positive attitudes regarding use of ICT in education. In addition, a study by Lau and Sim (2008) noted similar results. Similar results were as well obtained in Australia where teachers of English had positive attitudes towards CALL which is in contrast to their Spanish counterparts who showed negative attitude towards CALL (Bilbauta & Herrero de Haro, 2014).

Furthermore, studies have shown that one of the most important prerequisites for successful implementation of CALL is proper teacher training. Ganszauge, Hult, Sajavaara

and Konttinen (1994) emphasized that a strong initial support and information about the possibilities of using the computer are a vital factor for teachers when it comes to choosing whether or not to use CALL in their classroom. Moreover, specific education in CALL is necessary because knowledge of how to use a computer is not the same as the ability to infuse CALL-based materials into language classes. In other words, CALL training should expose teachers to a variety of technologies taking into consideration English language teaching, methodology, SLA theories and optimal condition for language learning (Kilickaya & Seferoglu, 2013; Lei, 2009). Additionally, Kessler (2006) and Seferoglu (2007) noted that teacher candidates did not feel competent enough in using computers for teaching due to a lack of formal CALL training. An ideal starting point for teachers to gain needed knowledge about CALL and how to adequately use it is in the official teacher education programs at the university level (Luke & Britten, 2007).

Regarding advantages of CALL, the study by Bilbatua and Herrero de Haro (2014) showed that teachers in Spain and Australia agree that the main advantage of CALL is that it promotes learners' autonomy and offers them flexibility. They also see CALL as a creative and innovative tool in language classroom. The advantages of CALL also include immediate feedback, motivating students' learning, exciting and more fun learning environment, integrating different language skills, flexibility, and fostering individualization (Hani Bani, 2014). Furthermore, CALL can be a useful teaching tool because it offers a variety of language input and allows learners exposure to real and authentic context (Park & Son, 2009).

In regards to disadvantages of CALL, the participants of the study by Bilbatua and Herrero de Haro (2014) agree that the use of technology in language learning increases the

workload of teacher, not only when it comes to implementing CALL in a classroom, but also having in mind the time spent learning how to use it. The Disadvantages of CALL include inadequate number of computer, technical problems, inadequate teacher education, high cost of implementation, lack of time and well-designed software (Hani Bani, 2014). Many challenges of CALL, such as, were also reported by Pelgrum (2001). The results of his study are obtained from a worldwide survey among samples of schools from 26 countries. The most frequently perceived challenge of CALL is insufficient number of computers (70%), followed by teachers' lack of knowledge and skills (66%). Additionally, the participants indicated that CALL was difficult to integrate in instruction (58%), and that it was time-consuming (54%). Furthermore, Mahdi (2013) identified five major issues: personal, technical, pedagogical, socio-cultural, and institutional issues.

Investigating the use of computers by student teachers in their practicum, Wand and Holthaus (1997) found that computers were mostly used for word processing and educational software. Additionally, Wozney, Venkatesh, and Abrami (2006) discovered that teachers mostly used the Internet, word processing programs, and CD-s. On the other hand, teachers in Turkey used computers mainly for organizational purposes rather than instructional and educational purposes (Kuskaya & Kocak, 2010). Similarly, Li and Walsh (2011) reported that computers were used for PowerPoint presentations with the purposes of showing pictures, grammar rules, and sentence structure.

Scarce research about teachers' willingness to use CALL in their classroom has shown mixed results. Bilbatua and Herrero de Harro (2014) found that Spanish and Australian teachers of English were not willing to include more CALL in language practice because of the amount of time needed to do so successfully. On the other hand, Kilickaya

(2009) reported that Turkish students of the Department of Foreign Language Education were willing to use CALL tools in their future career, even though they faced some problems like lack of equipment and support. The possible reason behind these opposite results could be the age difference between Australian and Spanish English language teachers and Turkish student teachers of English. Bauer (2002) investigated what it took to successfully integrate technology in elementary education, and concluded that relatively new teachers were more confident regarding their abilities to successfully implement technology as part of their teaching.

Furthermore, even the EPOSTL includes a number of descriptors regarding teachers' competences to use CALL. These descriptors, which may be regarded as a set of core competences language teachers should strive to attain, are as follows (Newby, Allan, Fenner, Jones, Komorowska, & Soghikyan, 2007):

- I can use various ICT resources (email, web sites, computer programmes etc.);
- I can advise learners on how to find and evaluate appropriate ICT resources (web sites, search engines, computer programmes etc.);
- I can initiate and facilitate various learning environments (learning platforms, discussion forums, web pages etc.);
- I can select and use ICT materials and activities in the classroom which are appropriate for my learners;
- I can design ICT materials and activities appropriate for my learners;
- I can guide learners to use the Internet for information retrieval;
- I can use and critically assess ICT learning programmes and platforms;

- I can manage and use instructional media effi ciently (OHP, ICT, video etc.);
- I can supervise and assist learners' use of different forms of ICT both in and outside the classroom.

Even though CALL is not without its challenges, studies so far have shown that teachers are mostly positively inclined towards it. In the following chapter, we will see Croatian student teachers' of English attitudes towards CALL, as well as their experience with it.

## 7. The study

The purpose of this study was to investigate student teachers' of English viewpoints towards the use of CALL in a language classroom. The participants of the research were students of the first and the second year of English Language and Literature double major MA in Teaching English as a Foreign Language (MA in TEFL) programme at the Faculty of Humanities and Social Sciences, University of Rijeka. The data were collected by means of a short questionnaire which was administered during and after regular class. To my knowledge, no similar study was carried out amongst Croatian student teachers of the English language.

In this chapter, after a brief description of reasons which motivated the study, aims and research questions of the study will be given, as well as presentation of the results together with the discussion.

### 7.1. Motivation for the study

The technology itself is neither good nor bad. The same can be applied to the use of computers in education in general, and in language learning. Children nowadays are practically growing up surrounded by different types of technologies, such as computers, mobile phones, tablets, etc., which are primarily used for fun, but can also be used as a valuable asset in language learning. The fact is that computers are just a tool that can be beneficial when it comes to language learning, but they can also have no positive impact on learning outcomes. Generally speaking, in our context, technology is underexploited in the classroom, and it all depends on teachers and their willingness and competence to successfully implement CALL into their classroom. In light of the above, I wanted to investigate the attitudes of student teachers of English towards CALL.

Studies have shown that the most important factor for successful implementation of CALL into language classroom is teachers' motivation, willingness, and appropriate training (Riel, 1989; Ganszauge, Hult, Sajavaara, & Konttinen, 1994; Aydin, 2013). In order for teachers to be motivated, willing, and ready to pursue further training and education in CALL, they should receive special training and have positive attitudes towards the use of CALL in their classroom. The fact that teachers are those who should be able to implement CALL in their regular classroom means that their attitudes and opinions towards CALL could impact the further development of the field, especially in removing obstacles, and dispelling any reservations which could prevent them from using CALL in their classrooms.

The participants of this study belong to the so-called millennial generation who has grown up with mobile and digital technology as part of their everyday lives. What is more, they are more likely to be early adopters of technology than are older generations, are most likely to use the Internet, and they stand out when it comes to producing and uploading online content (Seppanen & Gualtieri, 2012). These qualities provide an ideal basis for further education in CALL and its implementation into language classroom. For this particular reason, their viewpoints towards the use of CALL were investigated.

Another reason is that my second major, alongside English language and literature, is Computer Science. As a future teacher of both English language and Computer Science, I wanted to see my colleagues' attitudes and opinions towards CALL because I believe that computers can make language classrooms more fun, interactive, authentic, and that they can engage students in active participation, as well as facilitate learning process.

## 7.2. Aim of the study

The main aim of the proposed study was to examine student teachers' of English attitudes and opinions towards the use of CALL, and to evaluate their interest and readiness to use CALL in their future classroom. Furthermore, the study hoped to investigate the potential benefits and challenges of implementing CALL as seen from the perspective of student teachers of English, and to explore student teachers' opinions about the possible purposes of CALL.

More specifically, the study aimed to provide answers to the following research questions:

RQ1 What are student teachers' attitudes towards CALL?

RQ2 What are the perceived challenges of CALL?

RQ3 What are the perceived benefits of CALL?

RQ4 For what purposes should CALL be implemented into the language classroom?

RQ5 What are student teachers' experiences with CALL?

RQ6 Are student teachers of English willing to use CALL in the language classroom?

## 7.3. Participants

The sample in this study consisted of 32 students of the first and the second year of the MA in TEFL programme at the Faculty of Humanities and Social Sciences, University of Rijeka. The participants were within the age range between 22 and 31 years. Of the participants, 43.75% were students of the first year, while 56.25%% were students of the second and final year of teaching track programme.

### 7.4. Instrument

The data were collected by means of a questionnaire that was was administered to the participants during and after a regular class session. The questionnaire comprised 2 demographic questions, 18 likert-type items and 20 open-ended questions. The 18 items were assessed on a scale ranging from one to five (strongly disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, strongly agree = 5). Six items dealt with student teachers' of English readiness and willingness to use CALL in the language classroom, while 12 items dealt with their attitudes towards CALL in general, and compared CALL and traditional language learning.

The open-ended questions investigated the student teachers' experience with and attitudes towards CALL, the perceived challenges and benefits of CALL, the purposes for which CALL should be used in EFL classroom, their willingness and readiness to use CALL in their future classroom, and their readiness to invest time in education about the use of CALL in the EFL classroom.

### 7.5. Results

The findings obtained from this study are divided into six subsections, each of which gives an answer to a specific research question: student teachers' attitudes towards CALL, perceived challenges of CALL, perceived benefits of CALL, purposes for which CALL should be implemented, student teachers' experience with CALL, and student teachers' willingness to use CALL in the language classroom. What follows is a detailed analysis of the participants' answers.

### 7.5.1. Student teachers' attitudes towards CALL

As can be seen in Figure 2, student teachers' of English attitudes towards CALL are mostly positive. When asked to describe their attitudes towards CALL in one word (positive, negative, or neutral), 66% of the participants said that their attitude is positive, 31% said that their attitude is neutral, while only 3% of the participants said that they have negative attitude towards CALL.

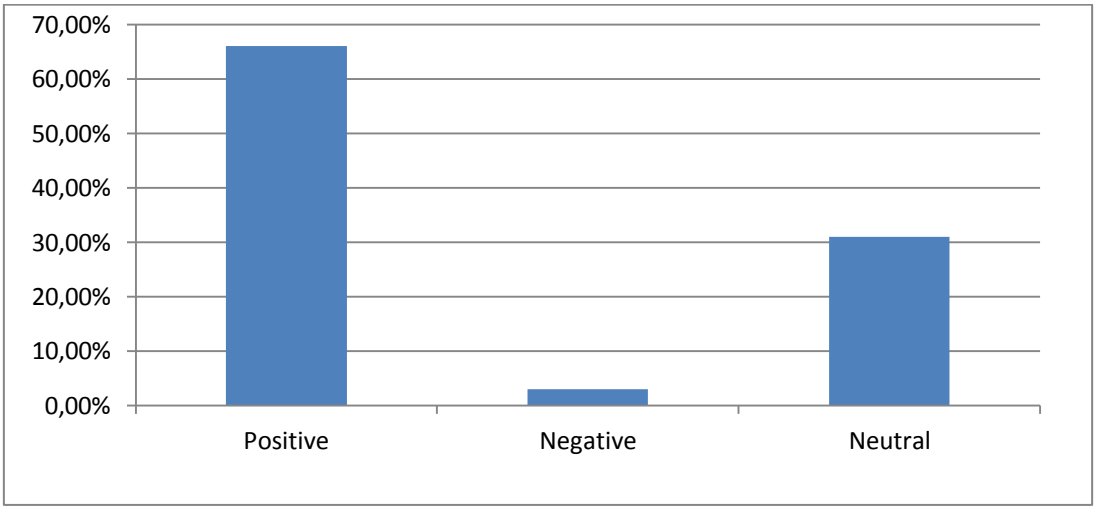


**Figure 2 Attitudes towards CALL**

The participants whose attitude towards CALL is positive believe that CALL can be very useful in the language classroom because it is interactive and can motivate learners. In addition, they are aware that learners also change and that use of computers "meets the need of modern, contemporary learners." One participant concludes that "technology develops, and therefore the methods of language teaching also have to change. We live in the age of computers, the Internet age, so we should use new technological resources this age offers in order to help students learn better and easier." What is more, they believe that the use of computers offers a wide variety of materials and different possibilities that teachers can use to make their classes more interesting and closer to learners. For example, one participant says that "CALL is very useful in classroom. There are numerous different

apps that can be used in classroom that make the lecture more interesting and fun for students." Furthermore, 15.6% of the participants said that they used technology on everyday basis and that it was only natural to use it in their work because they believed that language teaching needed to keep up with and exploit all the advantages technology has to offer.

A typical response of the participants whose attitude towards CALL is neutral was that they are not familiar enough with CALL to have an opinion. For example, "I think it is mostly because I do not know enough about it to make a firm decision whether I am for it or against it. We did not spend much time talking about it in classes, but we should have done that so we as future teachers know about an alternative way to cover some topics." However, one participant stated that "there are some positive aspects of CALL, but at the same time there are negative aspects, which is why my attitude is neutral." The participant who stated that his attitude towards CALL is negative explained that he is "more prone to using traditional ways of teaching."

Furthermore, as can be seen in Table 1, the participants are interested in using computer based resources in their future classroom (62.5% strongly agree, 18.7% agree) and would enroll at a CALL course if their University offered it (40.6% strongly agree, 34.4% agree). What is more, they believe that it is important for language teachers to be familiar with CALL (59.4% strongly agree, 31.3% agree) and that CALL can be a valuable tool in language learning (59.4% strongly agree, 31.3% agree). All together 62.5% of the participants either strongly agree or agree that it is important for language teachers to use CALL in their classroom, while 34.4% neither agree nor disagree.

When it comes to making CALL a compulsory course at the university, most of participants agree or strongly agree (total 53.13%) that CALL should be made mandatory course in language programmes, while 40.6% are in the neutral middle. However, only 25% strongly agree that CALL should be used in language workshop classes at the university level, 28% agree with the previously mentioned claim, and 12.5% are against implementation of CALL into language workshop courses. On the other hand, overall 65.63% of the participants believe that CALL should be part of every English language classroom at least to some extent, while only 6.25% are against it. These results also indicate that Croatian student teachers of English have relatively positive attitude towards CALL and its implementation into a language classroom, both for the purpose of teachers' education and teaching in general.

The majority of the participants (59.38%) also believe that CALL cannot completely replace traditional language learning. Only 9.36% agree with the claim that CALL can be used instead of traditional language learning. Even though they do not think that traditional language teaching can be replaced with CALL, 75% of the participants agree that CALL is as valuable as traditional language learning. When asked if CALL is more fun and interactive than traditional language learning, the participants' opinions were divided. In terms of interaction, 46.88% believe that CALL has advantage over a traditional classroom, 28.12% are neutral, and 25% do not think that CALL is more interactive. With regards to fun, the majority of participants (59.37%) think that CALL is more fun than traditional language learning, 28.12% are neutral, and 12.5% hold that CALL is not more fun when compared to a traditional classroom.

In addition, the participants were asked for their insight into the main implications of CALL on the teaching of English. However, 75% said that they did not know enough about CALL to make such assumptions. Those who did comment say that they believe that CALL

| Claim | Frequency ( % ) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree | Mean | Standard deviation |
| I'm interested in using computer based resources in my classroom. | 62.500 | 18.750 | 15.625 | 3.125 | 0.000 | 4.41 | 0.86 |
| I would enroll at a CALL course if my University offered it. | 40.625 | 34.375 | 15.625 | 9.375 | 0.000 | 4.06 | 0.98 |
| It is important for language teachers to be familiar with CALL. | 59.375 | 31.250 | 9.375 | 0.000 | 0.000 | 4.50 | 0.67 |
| It is important for language teachers to use CALL. | 31.250 | 31.250 | 34.375 | 0.000 | 3.125 | 3.88 | 0.98 |
| There should be a compulsory CALL course in language programmes. | 15.625 | 37.500 | 40.625 | 3.125 | 3.125 | 3.59 | 0.91 |
| CALL should be used in language classes/Jezične vježbe. | 25.000 | 28.125 | 34.375 | 6.250 | 6.250 | 3.59 | 1.13 |
| CALL is as valuable as traditional language learning. | 34.375 | 40.625 | 15.625 | 6.250 | 3.125 | 3.97 | 1.03 |
| CALL can be a valuable tool in language learning. | 59.375 | 31.250 | 9.375 | 0.000 | 0.000 | 4.50 | 0.67 |
| CALL can completely replace traditional language learning. | 3.125 | 6.250 | 31.250 | 25.000 | 34.375 | 2.19 | 1.10 |
| CALL is more interactive than traditional language learning. | 21.875 | 25.000 | 28.125 | 15.625 | 9.375 | 3.34 | 1.26 |
| CALL is more fun than traditional language learning. | 21.875 | 37.500 | 28.125 | 9.375 | 3.125 | 3.66 | 1.04 |
| CALL should be part of every English language classroom at least to some extent. | 34.375 | 31.250 | 28.125 | 3.125 | 3.125 | 3.91 | 1.03 |

**Table 1 Attitudes towards CALL**

can provide new methods for teaching different language skills, i.e. a modern approach to language teaching, and that it can provide easier access to more authentic materials. Furthermore, there are several factors that would influence their decision on teaching with computers. The most frequent answer is availability of computer equipment in schools and available funds. Moreover, their knowledge regarding technologies used in CALL and school policy would also have an essential role when choosing whether they should teach with or without computers. On the other hand, only one participant says that the use of CALL is time consuming and therefore should not be used, at least not as an obligatory part of the course. The participants unanimously agree that CALL has a lot of potential and a bright future, and that it will become more and more present throughout the years which follow. As one participant concluded: "We are surrounded by technology so probably CALL will be implemented, and will be an invaluable part of EFL classroom."

### 7.5.2. Perceived challenges of CALL

As every other aspect of teaching, CALL has some challenges. Answers from the were grouped into nine categories which can be seen in

Table 2. According to a majority of the participants (60%), the most frequently perceived challenge of CALL is teachers' knowledge, or rather lack of it. The participants fear that teachers are not ready to successfully implement CALL into their classroom due to a lack of education in the field. This is consistent with results about student teachers' experience with CALL which will be discussed in subsection 7.5.5. Moreover, they think that another problem would be possible technical issues and difficulties in choosing appropriate CALL technologies and software. However, only 12% of the participants believe that teachers would not be interested in education, and would lack will to learn the needed skills. Only

8% of the participants think that learners' lack of knowledge to use computers and similar technology would be a problem. As one participants stated, "most children nowadays have smartphones, computers, and tablets, so computer in language classroom would probably be completely normal and easy to use for them."

Additionally, the participants believe that implementation of CALL would be challenging due to a lack of needed technology in schools (40%) and lack of funds (32%), both for teachers' education and procurement of the necessary technology. Moreover, some (12%) are concerned that CALL is time-consuming and that it "takes too much time to find appropriate and relevant resources." Having in mind learners' parents, participants (8%) fear that they would complain because "it may seem to them that their children (i.e. learners) are only playing games or that they are using computers too much." Only 4% of the participants think that there is an absence of real communication in CALL, and that there would be problems with the integration of CALL into traditional testing and grading. Furthermore, some participants (4%) fear that teachers would not get enough support from their school, i.e. school principals.

| **Challenge** | **Frequency (%)** |
|---|---|
| Teachers lacking knowledge to use computers and similar technology | 60 |
| Availability of necessary technology in schools | 40 |
| Lack of funds | 32 |
| Lack of will to learn the needed skills | 12 |
| Time-consuming | 12 |
| Complaints from parents | 8 |
| Learners lacking knowledge to use computers and similar technology | 8 |
| Integration of CALL with traditional testing and grading | 4 |
| Absence of real communication | 4 |
| No support from schools | 4 |

**Table 2 Challenges of CALL**

To overcome the disadvantages of CALL in general, the participants suggest that the government should fund proper teacher education, as well as of learners in terms of introducing an obligatory computer science class at the beginning of and throughout elementary school, as well as secondary education. One participants' remark is that "it is necessary to educate future teachers about it [CALL] better. After that, maybe try to educate current teachers about it as well, if they are interested." In addition, schools should be adequately equipped with the technology needed to successfully implement CALL, and school policy should encourage teachers to use CALL in their classroom.

### 7.5.3. Perceived benefits of CALL

The values in

Table 3 show student teachers' of English opinion about the possible benefits of incorporating CALL in the EFL classroom. The participants' answers were grouped into seven categories. Sixty-nine percent think that the biggest benefit of CALL is that lessons would be more interesting and engaging for learners, while 29% believe that CALL can make English language learning more interactive, as well as more dynamic and therefore much easier Furthermore, 44% of the participants maintain that implementation of CALL would increase learners' motivation for learning English because "CALL is closer to them than traditional frontal teaching", and because "learners would consider language learning as playing rather than studying." Additionally, one participant concludes "I think it would make them more interested in the subject, the topic. They use computers and apps everyday and some of them maybe even use some of them to learn a language, they just don't know how it is called." Another interesting remark is that "learners would be able to

store all the information more efficiently using a computer or a tablet, as opposed to carrying tons of books."

Another perceived benefit of CALL is an easier access to authentic materials (56%), especially in terms of listening to and getting to know different accents. What is more, the participants (50%) believe that CALL offers a wide range of different activities that can be used in the classroom, and enables access to a variety of resources to be used as a tool in teaching. The possibility of immediate feedback in some CALL technologies is another benefit some student teachers of English (16%) see, as well as software designed for language learning (35%), which allows learners to "learn at their own pace in their spare time", as well as "use the software at home independently, so they don't have to depend on the teacher."

| **Benefits** | **Frequency (%)** |
|---|---|
| Interesting lessons | 69 |
| Authentic materials | 56 |
| Variety of activities/resource | 50 |
| Increased motivation | 44 |
| Language learning software | 35 |
| Easier learning | 29 |
| Immediate feedback | 16 |

**Table 3 Benefits of CALL**

### 7.5.4. Purposes for which CALL should be used

There are many different purposes for which CALL should be used that participants of this study have recognized. First of all, CALL could improve the learning experience because "technology is the future and it is only natural that it is used in language learning also." This remark indicates that there are some participants who strongly believe that CALL

should be used in EFL classroom because it can motivate learners and help them in the learning process, especially since "children are used to work with computers so their implementation into classroom could be useful and interesting for them." Secondly, CALL should be used to access a range of authentic materials which could help learners to "get to know the culture", "learn the correct native pronunciation of words", "learn about and hear different accents of English", and "enjoy all benefits of task-based learning."

Furthermore, the participants suggest that CALL could be used for acquisition of new vocabulary, especially with help of object-finding games. Also, they think that CALL could be beneficial for inductive teaching of grammar, and for enhancing learners' writing skills, especially in terms of collaborative writing. Moreover, they see great potential of CALL when it comes to revision, and benefits of exercises done on a computer thanks to the possibilities of immediate feedback. Another purpose for which CALL could be use is to check learners' listening skills and listening comprehension. Additionally, 44% of the participants believe that CALL should be used for "anything it can be implemented to (vocabulary, grammar, comprehension, listening, reading, writing, etc.)" because "possibilities of CALL are endless, but how it is used depends mostly on teachers' motivation, imagination, and in the end their knowledge." On the contrary, only 3% of the participants believe that CALL should not be used for any purpose, i.e. that CALL should not be used at all in the EFL classroom because "we [teachers] should go back to using only books."

### 7.5.5. Student teachers' experience with CALL

When asked at which levels of education they have encountered CALL, 6.25% of the participants claimed that they have not encountered CALL at all, 18.75% encountered

CALL during their primary education, 28.13% during their secondary education, and the majority (81.25%) at university (Figure 3).

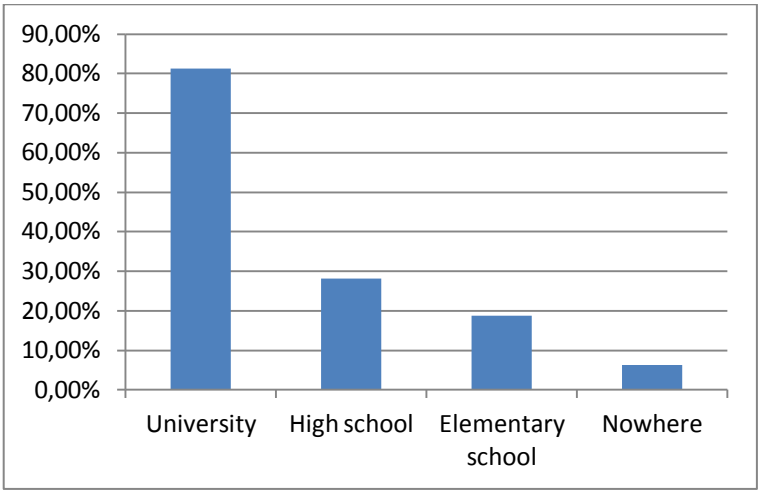


**Figure 3 Level of education where CALL was encountered**

Additionally, participants were asked to briefly describe what they believe CALL was and what it incorporated. The majority of them listed the use of computers in general (53%) without specifying how they should be used, 34% of the participants listed the use of special a computer software, while only a few mentioned use of materials in digital format (9%), use of the Internet (6%), use of multimedia (3%), and games (3%). Most of the participants (93.75%) have not had any training in CALL, while only 6.25% have had some training. Moreover, 81.25% of the participants claim that they have learned about CALL at the university in only one course when a presentation about CALL was given by their colleagues.

Even though student teachers of English lack formal education about CALL and have little or no experiences in CALL, they have many ideas how CALL could be implemented into their future classroom. Computer assisted learning software is mentioned by 29% of the participants, computer games, Power Point presentations and use

of mobile phones by 16%, different kinds of video by 13%, e-books by 9%, while only 3% of the participants say they would use electronic dictionaries, grammar checkers, and web 2.00 tools. However, 19% of the participants do not have any ideas how to implement CALL into their future classroom.. Only 16% of the participants claim that they have encountered software for learning English, specifically DuoLingo (6%), Tell me more Kids (3%), Articulate Storyline (3%), MS Office (3%), and CD that accompanied course book (3%).

### 7.5.6. Student teachers' willingness to use CALL

The values in

Table 4 indicate that the vast majority of student teachers of English (87.5%) are willing to use CALL in their future classroom. Only 6.25% of the participants say that they are not willing to use CALL, and 6.25% remains neutral. When it comes to spending time to design their own computer based resources, overall 46.9% of the participants are willing to do so, 31.2% are neutral, while 21.9% are not willing to spend their time designing their own materials.

Even though the results discussed in the previous subsection show that the participants have not had any training in CALL, overall 59.38% of the participants believe that they can successfully implement CALL in the classroom, while 18.75% do not think they are capable of doing so. Having in mind computer literacy, 65.6% think that their current computer literacy is enough for successful implementation of CALL, while the rest are neutral. A minority (18.75%) of the participants believe that they would not be able to successfully implement CALL into their language classroom, even though not a single participant believes that his or her computer literacy is insufficient to successfully implement CALL into a language classroom. These results show that some participants are

aware that CALL is not the same as regular computer literacy. Also, the results indicate that Croatian student teachers of English are mainly confident about their computer skills and knowledge.

| Claim | Frequency ( % ) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree | Mean | Standard deviation |
| I can implement CALL in the classroom. | 34.375 | 25.000 | 21.875 | 12.500 | 6.250 | 3.69 | 1.26 |
| I am willing to use CALL in teaching. | 46.875 | 40.625 | 6.250 | 3.125 | 3.125 | 4.25 | 0.95 |
| I am willing to invest time in education about the use of CALL. | 34.375 | 40.625 | 21.875 | 3.125 | 0.000 | 4.06 | 0.84 |
| I am willing to spend time to design my own computer based resources. | 18.750 | 28.125 | 31.250 | 15.625 | 6.250 | 3.38 | 1.16 |
| I think that my current computer literacy is enough to successfully implement CALL in my classroom. | 31.250 | 34.375 | 34.375 | 0.000 | 0.00 | 3.97 | 0.82 |

**Table 4 Willingness to use CALL**

Regarding formal education on CALL, 84.35% of the participants are ready to invest time in education and training in this field. Those who are not interested claim that they do not think it is necessary (6.26%), that they do not want to teach in general (6.26%), and that they "prefer physical books" (3.13%). The amount of time that the participants are willing to invest in education about CALL varies. Some participants are ready to spend as much time as is necessary to "get a firm grasp on what CALL is and how to use it", while others would like to invest as little time as possible because they "do not have enough free time." Additionally, there are those who believe that a few courses at the university would be enough, and a few who believe that education about CALL is a "life-long process because technology is rapidly changing and developing."

### 7.6. Discussion

Following the detailed data analysis, six main topics emerged in this study, and what follows is a summary of the results. First of all, student teachers of English mostly have positive attitudes towards CALL, which is the first step towards successfully implementing it into the language classroom. For example, the participants are interested in using computer based resources in their future classroom, as well as taking a course about CALL if the university offered it. What is more, they believe that CALL can be a valuable tool in language classroom, that it is equally valuable as traditional learning, but that it cannot completely replace traditional language learning. Participants agree that CALL cannot replace teachers, even though teachers can and should use CALL to better their teaching. This is important because CALL should not be considered a method of language teaching, but rather a tool which can be used to facilitate learning process.

Furthermore, those participants who are neutral (66%) admit that their lack of knowledge about CALL prevents them from having a firm opinion, either positive or negative. However, the results show that the participants are aware that CALL could be beneficial tool in language classroom and that it would be helpful to learn more about it because in the future computers could have a vital role in language teaching, but also in education in general.

Croatian student teachers of English have positive attitudes towards CALL in which is consistent with the studies by Albilirini (2006), Lau and Sim (2008), Park and Son (2009), Bordbar (2010), Kim (2011), Aydin (2013), and partly with study by Bilbatua and Herrero de Haro (2014). It is interesting that participants of the aforementioned studies do not belong to the same age groups so it seem that age is not really an essential factor in formation of positive attitudes towards CALL. However, age is an important factor when it comes to confidence about using CALL and overall computer literacy skills (Bauer, 2002; Seferoğlu, 2007; Redmond, Albion, & Maroulis, 2008). The participants of this study are confident about their computer literacy and believe that they would be able to successfully implement CALL into their future classroom. Nevertheless, it should be noted that this is only their perception and belief since no testing was done about their actual knowledge and skills. Having in mind that teachers' attitudes towards CALL have a significant impact on the use of computers in classroom (Aktins & Vasu, 2000; Lam, 2000; Kim, 2002; Redmon, Albion, & Maroulis, 2005), it is an excellent starting point that Croatian student teachers of English are positively inclined towards CALL.

Second, they are able to critically analyze and notice many challenges of CALL. For example, they believe that the biggest challenge of CALL is teachers' knowledge, or rather

lack of knowledge to adequately use computers and similar technology in their classroom, as well as shortfall of technological equipment in schools, and lack of money needed for successful implementation of CALL. Student teachers of English fear that Croatian schools are not adequately equipped. They say that availability of technology infrastructure and resources would play an important role in their choosing whether or not to implement CALL into their classroom, which is similar to previous findings (Pelgrum, 2001; Norris, Sullivan, Poirot, & Soloway, 2003; Peneul, 2006). In addition, they are confident about their computer literacy and their abilities to implement CALL into their classroom, which is similar to the findings found in the earlier research (Albilirini, 2006; Lau & Sim, 2008; Park & Son, 2009; Bordbar, 2010; Kim, 2011), but opposite of the findings by Kessler (2006) and Seferoglu (2007).

However, despite their confidence, they find lack of teachers' knowledge as the second biggest challenge of implementation of CALL, similar to the previous findings (Pelgrum, 2001; Bauer, 2002; Park & Son, 2009; Hani Bani, 2014). This finding also indicates that teachers' education is crucial for successful implementation of CALL into language classroom. What is more, even the descriptors from the EPOSTL point to the necessity of CALL in language classrooms which is why teachers should be competent to successfully implement CALL. It is interesting that the participants are interested into further education about CALL even though they think that they are capable of using CALL with their current knowledge. The participants also believe that children should not have major difficulties in using computers in language classroom because children nowadays are familiar with technology. However, they did not take into account that maybe their learners would be adults whose knowledge of computers and technology is limited. This raises questions whether teachers of English should in a way teach their learners how to use computers in

language learning. A problem could arise concerning time-management, especially if learners are not familiar with the use of computers. Another possible problem is the possibility that the focus of the lessons would be computer instruction, rather than language instruction.

Third, although Croatian student teachers of English are aware that CALL comes with its challenges, they are also able to see the benefits of CALL. For example, they think that CALL would make lessons more interesting and fun to learners which would increase their motivation for learning English language. However, this is not necessarily a positive aspect of CALL and it is important that teachers know how to control the situation in the classroom and how to adequately choose when CALL is appropriate to make sure that learners are actually learning, and not indeed playing. Furthermore, the participants believe that CALL provides both teachers and learners with an easy access to a wide range of authentic materials, as well as opportunities of immediate feedback, which is consistent with previous studies (Park, & Son, 2009; Hani Bani, 2014). However, it should be noted that positive outcomes of CALL largely depend on the way in which CALL is incorporated into language classroom, and teachers' ability to do so successfully. After all, a computer is just a tool which can be a valuable asset in language classroom if used appropriately. One of the biggest benefits of CALL, which the participants of this study did not recognize, is that CALL materials are student-centered, which promotes self-paced learning.

Fourth, student teachers of English recognize that there are many purposes for which CALL should be used. They believe that CALL should be used for acquisition of new vocabulary, for teaching of grammar, to practice writing, reading, and listening skills, as well as for revision and different types of grammar exercises. Even though the participants have a

general idea what CALL is, that it has to do something with computers, they are not familiar with it in details. For example, 81.25% of the participants stated that they have encountered CALL at university. However, all of them took the same mandatory courses at university, some of which included use of a CMS, i.e. MudRi, which is also a part of CALL. This means that all of them have encountered CALL at least once during their university education, even though they were not aware of it. Consequently, no one suggested that CALL could be used to communicate with learners and send them materials.

It is also interesting to see that many of the technologies discussed in chapter 5 have not been mentioned by the participants, such as course management system (even though all participants have used MudRi), interactive whiteboard, e-Portfolio, corpora, electronic gloss and annotation, ITS, chat, blog, and wiki. This is possibly because student teachers of English have little or no training and experience in CALL, and they are perhaps not familiar that all of those technologies are also a part of CALL. Furthermore, the data were collected by means of an open-ended question (*How would you implement CALL in your future classroom?)* and it is possible that the participants did not remember that previously mentioned technologies even exist. The results would have been more reliable if the participants were given a list of CALL technologies instead of an open-ended question.

Fifth, they have not had any formal training in CALL, but they are interested in education about CALL. It is interesting that CALL was only mentioned in theory during one of their courses, especially since it is becoming more and more prominent and popular among teachers of English. In spite of their lack of formal training, the participants of this study recognize some forms of CALL which they are willing to use in their future classroom. For example, use of computer assisted learning software, Power Point presentations, videos, e-

books, and grammar checkers. Along with positive attitudes, another important prerequisite for successful implementation of CALL is proper teacher education. The participants of this study have not had any formal training in CALL, but they are willing to invest their time in education about CALL. This is extremely important since teachers must be aware of the fact that technology should be used in those situations where it can successfully facilitate meaningful classroom activities, and positively influence learning outcomes, i.e. teachers must understand that CALL should not be an alternative to classroom teaching (Collins & Halversont, 2010).

The main point is not that teachers should use technology or a specific CALL tool in their classroom, but how those tools can be used to improve language teaching and learning experience. In other words, teachers should know how to choose appropriate CALL technology based on SLA theories, English language teaching methodology, and optimal conditions for language learning. Consequently, education about CALL should not only be focused on technology training and gaining ICT skills, but should emphasize subject specific technology (Klickaya & Seferoglu, 2013; Lei, 2009). The participants of this study also believe that education about CALL is crucial because teachers should be comfortable with technology to be able to infuse it into daily classroom activities. Moreover, the participants of this study report that they would like to have more courses about CALL, and that CALL should be taught in language teaching programs, which is accordant to the study by Luke and Britten (2007). Education is crucial because successful integration of CALL is always the responsibility of the teacher. Teacher training should include various ways available for using the computer in the EFL classroom, describe the possibilities of different tools and programs, and emphasize the importance of teacher's responsibility for the learning environment (Ganszauge, Hult, Sajavaara, & Konttinen, 1994).

Finally, Croatian student teachers of English are willing to use CALL in their future classroom just like their counterparts from Turkey are (Aydin, 2013). Furthermore, they are confident about their computer literacy and their ability to successfully implement CALL into their classroom although they lack formal education about CALL. In spite of their confidence, they are ready to invest their time in further education about CALL even though the amount of time they are ready to spend varies. Some participants believe that education about CALL is a life-long process and that teachers should always be ready for additional education about new technologies in CALL. Some think that they can master CALL in a couple of courses, while others say that they would spend as much time as it is necessary to learn how to adequately implement CALL into language classroom. I believe that a CALL course at university would be enough to get a gist of the basics. The most important is that teachers bear in mind English language teaching methodology and SLA theories when designing CALL activities. As far as technological aspect is concerned, there are many well-made educational software today that can be used easily, which is in contrast with early stages of CALL when teachers had to program application themselves. It is excellent that student teachers are ready to invest time in education about CALL because their knowledge about it seems to be limited, and, as previously discussed, education in the field is crucial.

### 7.7. Limitations

The limitations of this study must be pointed out. The study was conducted on a small number of participants of only one university in Croatia, which is why the results may not be applicable to the overall population of Croatian student teachers of English. Additionally, their attitudes towards CALL were probably heavily influenced by their lack of knowledge about and experience with CALL. Also, students in the first year of the MA in

TEFL programme, have not yet taken courses in teaching EFL, and are largely unaware of teaching approaches and methods. It would be interesting to investigate their attitudes again after they have completed their studies or some sort of education about CALL to see if their opinions have changed, especially in terms of challenges and benefits of CALL.

## Conclusion and implications

Computers have indeed become a part of our everyday lives, and it is really not surprising that they are also used for educational purposes. The aim of this thesis was to investigate student teachers' attitudes towards CALL. Since the participants belong to the millennial generation it is not surprising that their attitudes towards CALL are mostly positive and that they are willing to use CALL in their future teaching.

The participants were also successful in recognizing many challenges of CALL: teachers' lack knowledge to use computers and similar technology, lack of will to learn the needed skills, lack of funds, absence of real communication, time-management (CALL is time-consuming), availability of necessary technology in schools, complaints from parents, learners' lack of knowledge to use computers, lack of support from school, and problem of successful integration of CALL with traditional testing and grading.

What is more, they stated that benefits of CALL included more interesting lessons, increased learners' motivation, the use of authentic materials, variety of resources and activities, immediate feedback, easier learning, and the use of language learning software. Regarding the purposes for which CALL should be used, the participants listed the acquisition of new vocabulary, for teaching of grammar, to practice writing, reading, and listening skills, as well as for revision and different types of grammar exercises. In regards to formal training about CALL, the participants have not had any.

The analysis showed that there is a great interest for CALL courses which could be introduced as joint courses of the Department of English and Department of Informatics. The University of Rijeka currently does not have such a course and it would surely be well-accepted among students. Perhaps CALL could be included in general teacher education

courses at the University, or it could be offered as an elective course. More attention could also be given to CALL in the pre-service training in schools. Moreover, professors at the University could teach using CALL so their learners can learn through experience. Student teachers of English are mostly digital natives today and it would be excellent to create opportunities in courses at the University to draw on the knowledge they already have and to tap into their potential.

It is essential that teachers understand that CALL is meant to supplement face-to-face instruction, and not completely replace it. It may seem that implementation of CALL is easy, especially if one is confident about own computer literacy skills, but what is more important is the well thought-out way in which CALL can facilitate language learning, and its successful integration into subject curricula. Of course, knowledge of computer software is also a necessity. Teachers should have a good knowledge of the programs used in their classroom so they can design meaningful activities that foster learning. A good balance of CALL and more traditional methods should always be kept which is another reason why teachers should be trained in CALL pedagogical design.

All things considered, education is the most important prerequisite for creating a computer-based EFL environment. Education is by all means necessary so teachers would know not only how to implement CALL into their classroom, but also how to recognize learning situations for which CALL is a suitable and adequate means of teaching. Computers are, after all, just a tool that only skilled hands can put to a proper use.

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