

# **SOCIAL SCIENCES. Education & Educational Research**

#### **REVIEW ARTICLE**

# Information and Communication Technologies in Students' Language Learning

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## Abstract

	Abstract
Background and Aim of Study:	The article presents the essence of means of information and communication technologies (ICT) in students' language learning. In the article we consider that fresh thinking about the ways in which we may use tools and technologies in language learning is necessary, on the basis of evidence from the field including the markets currently developing in intersections of ICT, media, and language learning. The basic terms of the means and classifications of information and communication technologies are analyzed as well. The aim of the study: to clarify the underpinning of the means and classifications of information and communication technologies (CALL) in foreign language students' training.
Material and Methods:	The analytical method of scientific research is used, on the basis of which the study of foreign sources is done, as well as the analysis, systematization and evaluation of the facts, phenomena and processes are used.
Results:	It is set that the ICT means can be realized for the effective foreign language students' training. The article also determines the respondents' overview the problem, the peculiarities of specialists' training in the field of computer-assisted language learning.
Conclusions:	The conclusion of the research is to know and to use all the advantages of information and communication technologies in students' learning. The advantages of ICT and its new tools are high but they are generally not understood in the countries and Ukraine as well and any technological training innovation tends to be delivered in other fields of operation not in education. Such development tends to remain unconnected to any language training undertaken where it is determined the peculiarities of specialists' training in the field of computer-assisted language learning. Further development of CALL specialists depends on recognition, including recognition by professional organizations.
Keywords:	information and communication technologies, computer-assisted language learning, professional training, foreign language, students' training.
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#### Introduction

Languages, media and new technologies are themes that have been investigated in several different contexts at a European level (Kukulska-Hulme and Viberg, 2018; Coverdale-Jones, 2017). A number of projects connected with information and communication technologies (ICT) supported language learning have been funded, which through various approaches have aimed to demonstrate the added value that can be obtained from using ICT and new media, either alone or together with face-to-face interactions to create 'blended' language learning experiences (Bolliger and Shepherd, 2018; Collins and Halverson, 2018). In parallel, European markets, increasingly in recent years, have been producing new products and services for language learning through the use of ICT and media (Huda et al, 2018). European researchers Stevens, Shield, Holmes, McLaughlin, Cunningham, Loir and others studied the problem ten years ago (Stevens and Shield, 2007).

From this increasing body of experience, an understanding is emerging of the need for certain conditions, if the expected benefits of the use of ICT and new media are to be achieved and interventions made more targeted and effective (Chapelle and Sauro, 2017). These include appropriate pedagogical support and teacher training, digitally competent learners, well maintained infrastructure, appropriate digital content (Fernando, 2018). Some problems I have observed for fifteen years too (Kostikova, 2015; 2018). There are discussions among experts and in the professional communities related to language learning on the arguments that language learning multimedia sources (Lieshout, Egyedi, and Bijker, 2018) need to be made easier and more interesting to use, that multicultural and multilingual environments need to be developed to make use of Europe's rich heritage, and that older as well as emerging new media (e.g. interactive TV, mobile internet, podcasting, MP3 players, electronic games) and 'edutainment' in general need to play an important role in promoting (Woodrow, 2017) language learning and multilingualism. So, it is necessary to show the updated terms and classifications of information and communication technologies, today peculiarities of students' training in the field of computer-assisted language learning.

*The aim of the study.* To clarify the underpinning of the means and classifications of information and communication technologies, and peculiarities of computer-assisted language learning.

#### Materials and methods

In this article we will focus on understanding, knowing the advantages, and using ICT in professional training while learning English with students. Our discussion will be based upon the previous researchers' analysis and our discussion in H. S. Skovoroda Kharkiv National Pedagogical University aimed at learning how students and teachers are ready to use ICT in foreign language students' training.

The analytical method of scientific research is used, on the basis of which the study of foreign sources, using the analysis, systematization and evaluation of the facts, phenomena and processes is done.

#### Results

In the article we consider that fresh thinking about the ways in which we may use new tools and technologies in language learning is necessary, on the basis of evidence from the field including the markets currently developing in intersections of ICT, media, and language learning. It is time to examine in both depth and wide scope how language learning is adapting and benefiting from the ever-faster changing world of communications and new technologies, with the exponential growth in the use of mobile and handheld devices and ICT for social and entertainment purposes over the last few years. As technologies converge and boundaries between broadcast and interactive media create new opportunities for direct mediation, interactivity and personalization of home-based delivery, new possibilities for learning are emerging. The debate around the impact of ICT and new media on language learning is naturally influenced, if not determined, by the developments within the wider context of public media and the current debates and dilemmas confronting broadcasting and broadcasters (Sahragard, Khajavi, and Abbasian, 2014; Lan and Liao, 2017; Paepe, Zhu, and Depryck, 2018).

We consider that the ICT means can be realized for the effective students' training. It is often the combination of the traditional system with forming professional competence of students by means of information and communication technologies, to get over to the innovative system of professional training. The main characteristics of using ICT is the ability of differentiation and individualization of professional training, and also the possibility of development students' cognitive creativity activities.

The task of teachers in professional training is to create the conditions of practical language learning for each student to form a professional competence, to choose such methods of training which allow every student to show their activity, their creativity, to make more active student's cognitive activities in learning the English language. Students in modern society need to develop sufficient potentials and competences that enable them to take full advantage from the new opportunities that ICT offer, it helps students to achieve better outcomes.

The use of ICT and new media for forming professional competence can be seen as an area defined and shaped by factors which mainly fall into two broad categories: a) preparedness and willingness of students involved to adopt a 'digital' lifestyle and learning and behaviours, b) attitudes training and to and appreciation of forming professional competence by means of information and communication technologies. ICT and new media in forming professional competence are stimulating the development of networks and collaboration among students.

Information and communication technologies allow students to do difficult learning tasks using electronic dictionaries, Internet, machine translators, multimedia means, communicating via e-mail, in chats, forums, working with authentic literature etc. ICT in students' professional training also develop some writing skills: spelling, grammar, punctuation, editing and re-drafting. Students learn new skills: analytical, including improvements in reading comprehension.

We find out that students of H. S. Skovoroda Kharkiv National Pedagogical University no doubt understand the underlying reasons why information and communication technologies might be seen as an effective and useful study tool. The means of information and communication technologies have endless repeatability, the variety of ways in which they can be used. Nowadays it is impossible to work without means of information and communication technologies in professional training.

Using ICT has positive impact on students' performances at Universities particularly in the English language subjects, motivation, personal development. Students make sure learning by means of ICT enhance setting more stimulating and much better than in a traditional classroom environment. Still new technologies encourage independent and active learning, and students' responsibility for their own learning.

No doubt ICT can improve teaching by enhancing an already practiced knowledge and introducing new ways of teaching and learning. Teachers use ICT to support innovative pedagogy. There is also evidence that ICT means play a central role in fostering teachers' communication and increasing collaboration between educators. ICT also help teachers to work in teams and share ideas related to schools curriculum. Teachers claim to use ICT to do tasks, such as preparing lessons, sequencing classroom activities etc.

Issues relating to learning, to take-up among traditional and new users and changes in delivery and use are all part of a much bigger picture. It can be argued that it is meaningless to consider impact upon learning and language learning in particular without situating these activities within the larger spectrum of change. Thus, an undertaking to assess the potential of ICT and new media and its impact on language learning should aim to capture the essence of changing society in its many dimensions and how such social change can inspire, influence and inform the decisions at strategic and policy levels. The often conflicting perspectives operating in modern society, such as new opportunities versus available time, resources versus costs of use, potential of new technologies versus practicalities of everyday applicability ought to be taken into account, in order to assess where best to intervene, influence or invest effort and resources.

The researches point in 'Final report' (Stevens and Shield, 2007) although the vast majority of respondents have at some point studied or learned using computers or other technologies, using ICT for learning or study is not one of their most common activities in everyday life. They tend to use technologies far more frequently for socializing, communicating, working, informing themselves on various matters, or for entertainment. The frequency of learning or study with the use of ICT compares with that of using online facilities for banking, tax, or contacting officials. Learning or studying with the use of ICT is far more frequent than online shopping.

However, it is interesting to note that the younger the respondent, the more likely it is for them to use ICT and new media for studies or learning. Even in this self-selected sample of respondents, the use of ICT for formal language learning is not that widespread. According to the research computers/other technologies were the main medium in language courses for less than 10% of the respondents, and a regular course component for about 30%. Similarly, less than one in five respondents had earned formal certification of their language skills using technologies in the exams or in the preparation for them (Hampel, 2015).

On the other hand, informal language learning through exposure to the target language via ICT and the new media is much more common. Nearly all respondents had communicated in a foreign language online, and two out of three in online environments where participants in the communication used more than one language. Asked about the technologies and applications that have helped them to improve their language skills, even if language learning was not their main intention, respondents revealed interesting patterns of ICT use. A wide range of technologies was reported, some more popular and useful than others.

Among the devices mentioned in the survey, nine in ten respondents recognize the usefulness of computer and TV for improving language skills. About 70%, too, consider Internet as a useful tool for language skills improvement. On the other hand, even in this sample of generally active and motivated users of ICT and new media for language learning, only less than one in four respondents state that the use of mobile phones or other handheld devices has helped them to improve their language skills.

Among the applications specifically related to language or language learning, online dictionaries and grammars are by far considered as the most helpful for language learning. Two in tree respondents have found ICT language courses and materials useful. Other languagerelated applications, such as text corpora, concordances, automatic translators, speech recognition and reproduction are seen as helpful by less than half of the respondents. The use of entertainment media such as films on DVD and music on digital media (e.g. CDs, mp3) is recognized by most respondents as useful for language learning, even more than ICT language courses and materials.

High expectations from the use of new media for language learning are not always reflected in respondents' experiences (Teacher-centered and student-centered approaches in language teaching (Essay TEFL), 2011). Only videos on the web, web TV, web radio are mentioned by more than two in three respondents. Blogs (audioblogs, moblogs) have helped about 40% of respondents, while podcasts, social networking, interactive/digital TV, and digital games are mentioned by only one in three respondents or less. Only one in five mentions virtual worlds as an ICT application that has helped them improve their language skills.

However, there are clear generational differences, as the younger the respondent, the more likely it is for them to mention new media (e.g. social networking and virtual worlds) as helpful for improving language skills. Lately (Stevens and Shield, 2007) among the more 'conventional' communication applications, interestingly email (76%) is recognized as much more helpful for the improvement of the respondents' language skills than discussion forums (49%), chats (42%), voice over the internet (33%), SMS (27%), and videoconferencing (23%), see Figure 1.

Respondents to the online questionnaire generally agreed that the use of ICT and new media can be very helpful in language learning. Interestingly, responses emphasized aspects of 'direct' impact on language learning ('ICT could help me to speak, read, write, understand others better') more than the 'softer' support of enhanced confidence, organization of studies, planning of time, flexibility of place and learning matching personal needs/personality. Among the latter, flexibility in terms of the place of learning is underlined more than the other advantages.

Overall, among the possible advantages offered as options, respondents most readily recognized that the use of technologies offers flexibility and autonomy, as well as opportunities for self-improvement in studies/work (more than 80% 'strongly agreed' or 'agreed'). There was a similar response, too, about the statement that 'people learn languages differently when they use new technologies'.

Further, about seven out of ten respondents 'strongly agreed' or 'agreed' that the use of technologies can be a motivating factor for language learning, and gives learners access to more authentic (real-life) language use. Similar levels of respondents' agreement were also observed on the positive effects the use of ICT for language learning can have on social integration, learning accessibility and non-threatening learning.

On the other hand, there was far less agreement on statements about collaborative learning and learning encouragement. Only about half of the respondents 'strongly agreed' or agreed' that:

- 'Language learning is more collaborative when using technologies';

- 'Technologies can encourage me to continue studying, even when I feel like giving up'.

So, the extent to which ICT and new media are currently being used for language learning depends on whether citizens in each country would use such media for other aspects of their lives, including learning, as well as on whether they have reasons and willingness to pursue language learning.

No doubt it is necessary to train the foreign language teachers to work in CALL. There is a classification of candidates for CALL specialist areas that Hubbard (2009) offers. The goal is to provide reasons for why they can be considered specializations and in some cases offer examples of the skills and knowledge required to be considered expert in them.

Pronunciation specialist. It begins by describing the basic understanding of pronunciation one would expect a trained language teacher to have and then goes on to detail the deep knowledge and elaborated skill set one would require of a specialist in the absence of technology.

We would expect more from someone labeled a pronunciation specialist. The pronunciation specialist is an example to characterize the specialist concept. We would assume that they have a much deeper knowledge of phonological processes in the target language and an understanding of ways in which phonological theory and linguistic research could be relevant to learning. We would also expect a strong base in pronunciation research literature of both developmental processes and effective teaching techniques for different types of learners. The skill set would be similarly elaborated, with both higher analytical and higher diagnostic proficiency, the ability to create or adapt materials rapidly, and a wider repertoire of techniques and the know-how to apply them appropriately and assess their effectiveness.

Hubbard (2009) portrays how a CALL specialist builds on that initial foundation of expertise, adding the technical elements and further pedagogical nuances afforded by the technology: Returning to the CALL domain, a CALL pronunciation specialist would need to inherit the characteristics of a pronunciation specialist in general and have additional skills and knowledge relevant to CALL.

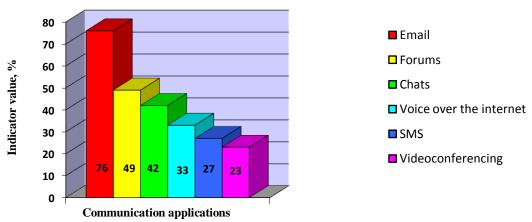


Figure 1. Communication applications for the improvement the respondents' language skills.

The latter would include knowledge of available CALL pronunciation software and its usefulness, an understanding of the strengths and limitations of automatic speech recognition in support of pronunciation development, familiarity with computer hardware and software applications that provide visual displays and effective techniques for utilizing them with students, a strong foundation in CALL pronunciation literature, and so on. Seen in this manner, a CALL specialist in a traditional language area like pronunciation has advanced skills and knowledge in both the CALL and non-CALL domains of that specific area.

Distance education specialist. It was stated that 'online teaching' could be categorized within the institutional role of classroom teachers by assuming a broader view of what constituted a classroom. While this may become true in the future, at this point there is ample evidence that online teacher can be considered a specialist role, requiring skills and knowledge beyond those for classroom teaching. There are, for example, separate certifications offered for online teaching, and a growing literature emphasizing the need for particular expertise and additional specialized training to be effective online. It is important to note, however, that someone who teaches online is not a 'specialist' just because they are operating in that environment. Becoming a specialist involves training and/or experience that leads to the requisite deep knowledge and elaborated skill set.

Classroom teaching specialist. This specialization is somewhat ill-defined but it represents a general trend toward recognizing a level of CALL knowledge and skill that goes beyond that of a typical classroom teacher. It is mentioned the existence of expert peers, specialists by our definition, whose additional expertise and time put in to assist colleagues is all too often not institutionally acknowledged. The draft Teachers of English to Speakers of Other Languages (TESOL) Technology Standards for Teachers, in an effort to define some of the characteristics of these more technologically advanced teachers, distinguishes 'basic' and 'expert' levels of technology proficiency. Below is an example from the most recent draft of the standards. Language teachers evaluate the effectiveness of specific student uses of technology to enhance teaching and learning.

Base level:

- Language teachers use appropriate procedures for evaluating student use of technology (e.g. rubrics, checklists, matrices \_ these may look at enjoyment).

- Language teachers elicit student feedback in order to improve student use of technology.

Expert level:

- Language teachers develop and share procedures for evaluating student use of technology.

- Language teachers examine student outcomes that result from use of technology (e.g. examining chat logs for more complex language).

The computer-assisted language learning specialization prepares students to work as the CALL specialist in an ESL/EFL program, selecting and coordinating software resources, constructing computer-based language learning activities, and conducting staff development workshops on CALL.

It is worth pointing out that the classroom teaching 'specialist' is actually something of an 'expert generalist'. As such the category borders on that of the CALL professional (Ziegler et al, 2017). The key point is that this label recognizes an institutional role that goes beyond one's own classroom teaching to support the needs of others and in some cases their professional development.

As it is known the levels of interactivity and individual control over media and communication networks, and ICT in general, is growing in all countries. The nature of the practice, pre-disposition of a population to their exploitation and the ability to access new ways of working are determined by individual and national circumstances.

Some key considerations/influences on take-up of language learning via ICT that are reported among respondents to the online survey from all countries include:

- Extensive use of new media for social purposes;

- Reluctance/resistance to using social networking for learning;

Perceived value of new ways of working among teachers, some groups of learners and some employers;
Experience in use of media as an influence in pre-disposition to adopting new ways of learning.

The majority of respondents acknowledged the value of the use of ICT for language learning purposes. The majority preferred mixed methods with some face-toface communication.

There are several options, both formal and informal, for helping individuals to develop the necessary foundation of knowledge and skills for a given specialization. Many respondents mentioned 'trial and error' as their most common means of building CALL expertise. While it is possible that many current CALL specialists have reached that level in a similar fashion, it would seem that considering similar structure for educating CALL specialists would be advisable. There are Course or in-service projects; Dedicated specialist courses; Computer-assisted language learning certificate and degree programs; Thesis and dissertation research, articles; Professional organizations and communities of practice; Mentors.

ICT and new media in language learning are stimulating the development of networks and collaboration among institutions. A significant number of resources are developed by groups of national and international companies that collaborate in joint projects. The impact of ICT and new media in language learning is huge. According to the President of Euro CALL, it has:

- instigated new resources in electronic format, in CD-Rom as well as through the Internet, so learners and teachers can choose between the formats or methods that are most convenient to them or more appropriate for a specific learning situation; - enabled students to work outside formal teaching by not limiting their learning to the classroom context and allowed space-time frontiers to be broken;

- created more possibilities for communicating, in real time as well as in deferred time or through recording, with native speakers of the target language.

As for the analysis in H. S. Skovoroda Kharkiv National Pedagogical University in particular, students are generally more confident in their everyday digital skills than teachers. But, teachers with a higher level of ICT profession skills and CALL field are generally more confident in their skills than younger people.

Nowadays the European Commission has published a Eurobarometer survey presenting European citizens' opinions on the impact of digitisation and automation on daily life. Many Europeans believe their digital skills are sufficient. When questioned about their digital skills, 35% of respondents fully agreed that their skills were sufficient for their daily lives whilst 36% tended to agree and 25% disagreed. Amongst respondents who are employed, 44% fully agreed that they were sufficiently skilled in the use of digital technologies to do their work whilst 36% tended to agree, 17% disagreed (Digital Single Market, 2017).

### Discussion

In determining the fast implementation of the best scientific, theoretical, practical ideas of using the information and communication technologies in foreign language students' training, the need for its understanding and researching is increasing. It should be noted that using the information and communication technologies experienced significant dynamics during their development, passing from simple to complex ones. Obviously, this way has allowed improving the understanding the needs and practice the information and communication technology use. There are some basic terms and classifications of information and communication technology means presented in the article. All of them have their own advantages and sometimes disadvantages. The results confirmed the practical data (Stevens and Shield, 2007).

Accordingly, the development of information and communication technologies contributed to the creation of modern means and new media, e.g. interactive TV, mobile internet, podcasting, MP3 players, electronic games. In this sense today, the effective modern means are videos on the web, web TV, web radio, blogs (audioblogs, moblogs), podcasts, social networking, interactive/digital TV, and digital games, so we have taken them for analysis. The analysis of Universities students and teachers' opinions made it possible to sum up that it is necessary to train the foreign language students and teachers to work in CALL. It indicates the expediency of their practice. The latter opens up the opportunity for the effective training such specialists for this purpose.

From a theoretical point of view, it is convenient to use the classification of candidates for CALL specialist areas that Hubbard offers (2009); this is a certain advantage for such specialists. However, the practice abd our research show the difference between different kinds of the specialists in CALL field. Nevertheless, unlike the results published about pedagogical support and teacher training, digitally competent learners, well maintained infrastructure, appropriate digital content (Fernando, 2018; Lieshout, Egyedi, and Bijker, 2018; Woodrow, 2017) data we obtained about Ukrainian University students and teachers' opinions for assessing the need and effectiveness of information and communication technologies, we point the following: the advantages of ICT are not understood well in Ukraine as well as many technological training innovation tends, they are delivered in other fields faster than in education. Such conclusions can be considered useful from a practical point of view, as it is possible to advise reasonably to teach University students and teachers to use ICT effectively and to train CALL specialists.

However, the rapid ICT updating allows asserting that the results obtained at a certain time can be changed. The inability to predict the latest developments in the ICT means within the framework of this study generates a potentially new and interesting direction for further research in this field.

### Conclusions

The research presents the basic terms of the means and classifications of information and communication technologies in foreign language students' training, peculiarities of specialists' training in the field of computer-assisted language learning, the respondents' overview of formal and, particularly, informal language learning. Pedagogical applications do not keep pace with and are integrated slowly into technological innovation and change. Educators are often resistant to using technologies which do not reflect what they consider to be current pedagogical best practice. Programmes of professional development for students and teachers do not always encompass current technological developments. Teachers often feel daunted by the speed of technological development which may threaten their relationship with learners who may be more skilled. The advantages of ICT and new media are high but they are generally not understood in the countries and Ukraine as well and any technological training innovation tends to be delivered in other fields of operation.

It is determined the peculiarities of students' training in the field of computer-assisted language learning. To date, only a few CALL specialties seem to have been recognized, perhaps, there will come a time when computer technology is so embedded in language teaching, and in education in general, that the term CALL specialist will not be that meaningful. Further development of CALL specialists depends on institutional recognition, including recognition by professional organizations. It should be noted that, whatever the path, becoming a specialist in some domain of CALL is a long-term undertaking. It requires a commitment to familiarizing oneself with the relevant literature, ideally adding to it, and through practice and experimentation garnering the skills necessary to master that specific CALL domain in language learning and teaching.

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#### Інформаційно-комунікаційні технології у вивченні іноземної мови студентами Костікова І. І.<sup>1</sup>

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#### Анотація

Вступ: Стаття розкриває сутність засобів інформаційно-комунікаційних технологій (ІКТ) у вивченні мови зі студентами. У статті ми вважаємо, що необхідно мати новий погляд на можливість використання засобів і технологій у вивченні мов, основою для яких є їхня доведена ефективність, включаючи галузі, що розвиваються в даний час на перетині із засобами ІКТ, засобами масової інформації та методики вивчення мов. У роботі також проаналізовано основні терміни класифікацій шодо засобів i інформаційнокомунікаційних технологій. Мета дослідження: Виявити засади засобів i класифікацій інформаційно-комунікаційних технологій, а також комп'ютерної лінгводидактики в навчанні студентів іноземної мови. Матеріал і Методи: підставі якого Аналітичний, на вивчалися аутентичні джерела, також метод аналізу, систематизації і оцінювання фактів, явищ і процесів. Результати: Підкреслено, що засоби інформаційно-комунікаційних технологій можуть реалізуватися для ефективної підготовки і навчання студентів з іноземної мови. Стаття також визначає думки респондентів з цього приводу, а також особливості підготовки фахівців з комп'ютерної лінгводидактики. Висновки: Знати і використовувати усі переваги інформаційно-

комунікаційних технологій в навчанні студентів. Переваги інформаційно-комунікаційних технологій та їх нових засобів є беззаперечними, але вони не завжди є зрозумілими, як в інших країнах, так і в Україні, а інноваційні технологічні тренінги, як правило, проводяться в інших сферах діяльності, в освіті. Така тенденція, як правило, не залишається й у галузі вивчення мов, де визначено особливості підготовки фахівців v галузі комп 'ютерної лінгводидактики. Подальший розвиток фахівців з комп'ютерної лінгводидактики залежить від визнання його важливості, визнання різноманітними професійними організаціями.

Ключові слова: інформаційно-комунікаційні технології, комп'ютерна лінгводидактика, професійна підготовка, іноземна мова, навчання студентів.

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