UDK: 004:37   Stručni rad

INFORMATION - COMMUNICATION TECHNOLOGIES IN TEACHING (PREREQUISITES AND PERSPECTIVES)

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Summary: *The time we live in is a time of information technology and technological progress. The entire social development depends on science and its application. Science and new technology are changing our way of life from the root. This technological development changes the individual as a being, and with this it changes the whole humanity. Education now appears to be the key factor in society that inevitably has to comply with the technological revolution. The modern way of life requires a new form of education that would be universal, flexible, an education that will meet the needs and interests of the new student, which will respond to various social needs, an education that will motivate students and encourage them to be active. Historically, starting from Socrates, Quintilian, Montaigne, Comenius, Rousseau and Diesterweg, we can observe that they all supported the instruction where the student learns to judge things and phenomena, and does not learn and know these by heart (Montagne, M., 1953); they advocated teaching that allows the person to express an opinion which is based on sensual cognition (Diesterweg, 1956, p. 52), rather than teaching that is focused on learning and memorizing of final knowledge that their teachers taught.*

Key words: *Technology, teaching, independent learning, society .*

INFORMACIONO – KOMUNIKACIONE TEHNOLOGIJE U NASTAVI (USLOVI I PERSPEKTIVE)

Rezime: *Vreme u kome živimo je vreme informacionih tehnologija i tehnološkog progresa. Celokupni društveni razvoj zavisi od nauke i njene primene. Nauka i nove tehnologije iz korena menjaju način na koji živimo. Ovaj tehnološki razvoj suštinski menja pojedinca, a samim tim i celokupno čovečanstvo. Obrazovanje je sada ključni faktor u društvu koje neminovno mora da se uskladi sa tehnološkom revolucijom. Moderan način života zahteva novi sistem obrazovanja koje će biti univerzalano i fleksibilano, koje će izaći u susret*

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potrebama i interesima novih učenika, koje će odgovoriti na razne društvene potrebe i koje će motivisati i ohrabriti učenike da postanu aktivni. Istorijski gledano, počev od Sokrata, Kvintilijana, Montenja, Komenskog, Rusoa i Distervega, može se primetiti da su svi oni podržavali onu nastavu u kojoj učenik uči da procenjuje stvari i pojave, a ne da ih uči i zna napamet (Montagne, M., 1953); zalagali su se za nastavu koja omogućava osobi da izrazi sopstveno mišljenje koje se zasniva na čulnim saznanjima (Diesterweg, 1956, str. 52), a ne za nastavu koja je usmerena na učenje i memorisanje konačnog znanja koje nastavnici predaju.

Ključne reči: *Tehnologija, nastava, samostalno učenje, društvo.*

1. HOW CAN ICT TRANSFORM THE LEARNING PROCESS INTO A PROCESS WHERE THE STUDENT IS IN THE CENTER?

Studies show that proper use of technology can catalyze the paradigmatic changes in content and pedagogy that is at the core of education and educational reform in the 21st century. If properly conceived and implemented, ICT can promote the acquisition of knowledge and skills that will provide students for lifelong learning. When properly applied computers could enable new ways of teaching and learning in the teaching process, much better than before. These new ways of teaching and learning are underpinned by the constructivist theory of learning and they change the teacher's role as being a central subject in the educational process and where as the worst form of learning - storing facts – occurs, placing the student in the center where the process of learning boils down to interaction and exploration. The table below clearly shows the differences between traditional and new pedagogy that uses ICT.

Table of differences between traditional and new pedagogy supported by ICT

Traditional pedagogy	New pedagogy with ICT
Activities given by the teacher	Activities given by students (active learning)
Instructions given to the whole class	Instructions to smaller groups (collaborative learning)
A little diversity in the activities	A lot of different activities
Tempo determined with the program	Tempo determined by the student
Cooperative work	Individual or group work
Homogenous	Heterogeneous groups
Individual work	Supporting others
Creative reproductive learning	Productive learning
Application of learned solutions for solving problems	Finding new solutions for solving problems (creative learning)
Without integrating theory and practice	Integration of theory and practice (integrative learning)
Respective subjects	Correlation between subjects
Evaluation by the teacher	Evaluation by the student
Summative	Diagnostic assessment

(Source: Thijs, A., et al. Learning Through the Web Available Online http://www.decidenet.nl/Publications/Web_Based_Learning.pdf Accessed 31 May 2002)

Active learning with ICT provides an increase of means for assessment, review, calculation, information analysis, setting a platform for research made by students, and analysis of new information. Students learn as they do something, from their activity, through solving

problems in everyday real life, making the process of learning not abstract and closer to real life. In this way, contrary to the traditional method of memorizing facts, ICT provides instant learning through practice and with the possibility given to the student to choose what to learn.

- Collaborative learning (learning through collaboration)

With the use of ICT the interaction and collaboration between students and teachers increases, working with people from different cultures and environments is enabled, and communication skills of students are improved.

- Creative Learning - ICT enables the teaching process to manipulate the existing information and to create works that are very close to everyday life rather than to regulate the information

- Integrative learning – ICT enables promotion of thematic, integrative approach to the process of learning and teaching. This approach rejects unnatural separation between different disciplines and between theory and practice that is characteristic of traditional classroom teaching.

- Evaluation of the teaching process - ICT enables a teaching process where the student is guided and assessed and is not just a static figure, i.e. a student taking part in an education process that is based on the textbook or copied materials. ICT provides many more ways and methods of acquiring knowledge which students can explore; they discover rather than just traditionally listen to a lecture from the teacher and remember facts.

Computer and the Internet in the process of teaching and learning in teaching English as a foreign language

Many times the question asked is: What is learning with the help of a computer or internet? Learning with the application of technology focuses on the development of technological awareness, and it includes:

❑ Fundamental, basic terms, concepts and operations
❑ Using the keyboard and mouse
❑ Using productivity tools (writing, editing) and graphics programs
❑ Use of research and tools for collaboration and communication (enamel)
❑ Basic skills in using programs and authorized applications such as logo or Hyper studio
❑ Developing awareness of the social impact of technological progress.

There are three main approaches to providing guidance on the application of computer and the Internet in the teaching process:

❑ Learning about computers and the Internet, where the main goal is learning about technology.
❑ Learning with the help of computers and internet where technology is applied in the teaching process (curriculum)
❑ Learning with the help of computers and internet where the development of technological skills is integrated through the curriculum.

Association of Teachers of English from the United States have created a pedagogical framework in which they state their best experiences or criticisms about the use of technology in teaching English based on their needs, goals and objectives.

Their philosophy says that good pedagogy should lead to implementing technology in the teaching process, so the guidelines, skills, and content should be improved in a way that meets the demands and needs of the teacher, student and the teaching process. If the above does not happen, the technology can easily become a target in itself, and neglect the purpose of teaching English.

Teachers must resist the temptation to use technology without first understanding the pedagogical goals and implications in teaching. Zeurcher (2002) used the metaphor of technology as a "powerful tool" that does not end in itself but is a tool that will enable you to better meet the goals in solving a given task. In this way, pedagogical goals have a leading role, and the technology is only a means to achieve these goals. Teachers believe that this is a very important difference; when technology is not tied to an authentic content and purpose, it rather becomes a burden for users. Hence if we bring technology into the teaching of English language we have to behave cautiously and critically toward it with very clear intentions about why we want to apply it and what we will achieve, or how it will affect students and the set objectives.

This framework allows teachers correct and precise instruction in the process of planning the use of technology in teaching. In this framework the authors rely on the experiences and problems faced by some teachers who have already applied technology in teaching, and, based on their research, found that the desired result is "meaningful and informed application of technology in the classroom that is dependent on teacher's implicit and explicit understanding of key content items. This includes their conception of learning English, knowledge of the purposes of instruction while having a clear picture of the social and pedagogical values of teaching, knowledge of technology and of how to encourage interaction between them as users (teachers and students), and how to understand some other elements that affect learning. In short, decisions that teachers make every day when considering what to do, how to perform and how to achieve success in teaching English are explicit.

❑ This framework is of great benefit to experienced teachers who successfully integrate technology in teaching as well as for those who have not been encouraged to apply it yet – it would serve as a tool for professional development. According to the research the authors suggest when and why technology should be used in teaching:

❑ Technology should aim to assess individual students and to strengthen their abilities to achieve success in teaching and in life in general

❑ It should provide additional teaching materials and resources and create wider access to these materials

❑ It should deepen students' understanding of some complex issues and improve their capabilities for global connections

❑ It should provide opportunities for access to certain forums, encourage electronic communication, etc.

Technology should not:

❑ replace developmental goals for studying a language with much simpler goals of the teaching technology

❑ replace teachers or pedagogy

❑ use complicated instructions and contents or focus only on the contents of the instruction

❑ completely overshadow all other written and printed materials and media

- ❑ be limited to certain sources or access to these
- ❑ complicate normal communication in the class or the tasks relating to this communication
- ❑ reduce the ability of students to participate in an activity by favoring those students that are more skilled in technical skills
- ❑ deepen social, racial, gender and economic inequality among students
- ❑ prevent the usage of creativity and imagination or multi-potential intelligence
- ❑ completely replace the relationship of the type face-to-face communication (direct) between teacher-student or student-teacher and the interaction between them

Experience shows that most teachers today, especially from Eastern European countries, still rely on chalk and blackboard in teaching as a main and indispensable means of work. But with time and technological progress many technological teaching aids are applied in the educational process. Maybe it is time to find a place for the computer to refresh the teaching process, making it more interesting, emphasizing its ability to interact with students. Teachers still do not have strong confidence in the full application of computers in teaching. A computer can be a student's partner in the process of learning how to play educational games or to apply examples, illustrate or simulate some operations, i.e. stimulate conversation.

If we rely on our short experience with the application of computers in teaching and monitoring students in teaching with computers, it is evident that they feel relaxed and confident relying on their skill of using computers (which our students sufficiently possess), as if they were doing something personal that, of course, everyone is trying to do as best as they can. Hence comes great motivation to work, primarily student's internal activation and motivation, which is one of the prerequisites of modern teaching. A computer can analyze specific errors that a student made and it can respond promptly and directly thus leading students in the process of analyzing their work and self-correcting in order to realize the principles and rules of a correctly performed task. A computer pays special attention to each student and provides instantaneous response to any question from a student. It acts as a tutor or leader. This flexibility is impossible in traditional teaching using instructional papers.

There are three models for the use of computers in teaching English:

- ❑ As a lecturer (teacher) of the language
- ❑ As a stimulus for conversation
- ❑ As a supplementary means for cognitive development

In order to use a computer in the classroom teachers need to become familiar with two basic concepts:

- ❑ Computer as a teaching aid - CAI (Computer-Aided instruction) a term used to describe a computer program designed for teaching. In these computer programs a computer is used for presentation of information, learning is reduced to passive reception of information on the part of the student and the knowledge obtained is checked with stereotypical tests.
- ❑ Computer as an aid in the process of learning the language CAL (Computer-Aided Learning) is a term used for various forms of learning foreign languages complemented by applying the computer through an interactive dialogue of the type teacher (computer) - student

In using the first program students follow the instructions as a lecture given at the terminal while communicating with the computer. This is generally limited to developing language skills for reading and writing; lessons may include exercises, practical tasks, practicing the development of reading comprehension skills, application of educational games or simulations. Listening comprehension skills are developed using sound or CDs. It is possible to communicate in short dialogues that are shown on the screen (students can hear them) and then answer the appropriate question. In the development of writing techniques students can use computers for writing papers with and without correction of mistakes, spell check etc.

In no way is a teacher excluded from teaching, but he/she finds and offers computer packages as resources in teaching. The way these packages are used is different and depends on the content being processed, the students' ages, their level of achievement, etc.

Using computers in teaching a foreign language can offer many kinds of unlimited activities with a special goal for language acquisition. Teachers who evaluate and monitor the progress of students interactively with other students can find many different computer packages to use in their methods of work. Applications such as Power Point are very useful in teaching English.

❑ Benefits of the application of computers in teaching:
❑ Both CAI and CALL systems allow normal or unusual mistakes that people make.
❑ By creating work programs through cooperation in both systems, each user can operate individually in a group.
❑ Programs respect the individuality of students to analyze the linguistic functions.
❑ Feedback helps students to analyze the linguistic features.

CALL program presents innovations to the students. They learn a language in a different way, much more interesting through games and techniques for solving problems. As a result, even the very difficult tasks can be interesting. The computer offers a variety of sources and approaches to learning a language that are very easily adjustable to the levels of students.

With the use of computers in teaching English the number of activities that can take place for successful learning of foreign languages increases. Apart from learning the English language, CALL program offers students a kind of computer education that is essential for modern lifestyle and could be of great help to the students' future careers.

With this kind of instruction students are much more relaxed, free from the fear that mistakes will be corrected and criticized. In fact, they seem to create their own learning environment, a kind of privacy where those not invited are not welcome; only some classmates can join if necessary. A computer never stops working. It is the best teacher since it can provide timely information for a very short period of time. Students using audio-visual technology can correct and reduce errors in pronunciation through the use of adequate programs or exercises. The use of computers in teaching English can help in improving the communication skills of students. In fact, the computer and the Internet can offer students a lot more exercise than usual; they can be a medium for real communication with people from English or other language speaking regions through correspondence and exchange of messages. (Oxford, 1990, p79).

Most useful activities in applying computers in teaching an English language course should primarily be a small set of acceptable answers to each question where it is easy to predict where student could be make mistakes.

Today's students require programs that offer interesting variations and combinations. Exercises like: replacing, transformations, gap-filling, dictations, word order exercises, or answering specific comprehension questions would be most suitable. Some educational games can help in perfecting reading skills. If a teacher wants to encourage students to read, he/she can create a game and present the steps that are important so as to be part of the game; or he/she can present a short text or some new words. Students can work in pairs or small groups to follow the steps more easily and thus cooperate and are encouraged to execute the tasks. The very fact that they use and speak English should encourage us.

During the processing of grammatical rules and structures, students can at any time use the field for help, or the teacher may propose to explain the rule and he/she, depending on the style and the ability of an individual student, chooses whether he/she will need help or is able to make his/her own conclusion. The field for help always has the correct answers and information required for the student so that the computer alters its role from being a means that instructs into a source from which knowledge is drawn.

Another significant innovation in the application of computer is self-check made by the student of the progress and knowledge. In the process of students' self-check they easily and timely perceive mistakes and analyze them, thus becoming more aware and more motivated to learn. The student can change the level of knowledge which is a very evident procedure for his abilities. Many standard games can be found on the list of educational and entertaining games such as crosswords, puzzles, animations, charts etc. Simulations and presentations are also very interesting for students. It o happens that students themselves offer to make a presentation. In this way, students actively participate in the preparation of teaching materials and are assistants in the teaching process, as opposed to being passive recipients of knowledge. Lindstromberg (2004) says that an interesting class is the one that motivates students, especially teenagers, and contains the following elements: - diversity (4-6 different types of activities in the course of one class) of activities such as games, using non-linguistic materials (pictures, objects, music), humor and occasional surprises. Practice shows that well-planned presentations can include all of the above elements and may be a strongly motivating tool. The presentations could best be applied for the following:

- ❑ Presentation of the theme (motivation)
- ❑ Explanation and practicing grammatical structures
- ❑ Presentation and explanation of vocabulary
- ❑ Pronunciation exercises
- ❑ Representation of certain cultural and civilizational elements - games, quizzes, associations.

Apart from the benefits that the use of computers in teaching English language has, however, there are certain limitations:

This particularly applies to students who are not trained to use computers, so when solving a given task it could happen that they spend much time looking for the letters on the keyboard. But, of course, the problem can easily be exceeded with constant practice.

Generally, when speaking about computers in teaching, we usually think that a student works in isolation and this is obviously not a positive aspect in the process of developing normal communication between students which is the main objective in every teaching unit in English language teaching. The practice shows that students in discussions are trying to use their mother tongue instead of the foreign language which is being taught. Teachers should not allow this if they want the students to succeed in learning the language and developing language skills.

CALL and CAI programs are more related to reading and writing skills, but could be applied to some auditory activities, although in a limited range.

Reading from a screen could be considered a disadvantage because it is more tiring than reading a printed text, of course, if it is being done during a longer period of time. Activities where the student has complete freedom such as writing essays, i.e. creative expression, are the least applicable in this type of instruction, as well as in translation of longer texts. We must understand that the computer is just an instructor; it is not bound by any method of instruction.

It takes a lot of time for a teacher to develop a program or plan to deliver a lesson using the computer, so it is not possible to do it continuously. The biggest problem, however, is the lack of classrooms equipped with technological resources, lack of access to the Internet, not having speakers for listening practice, weaknesses in software programs and problems of a technical nature which are very important in the realization of this type of teaching.

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