

Application of ICTs and Media Education in a European Educational Context

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Abstract

Information and communication technologies offer new forms of learning and teaching. The authors present some theoretical aspects of language learning and teaching related to ICT as an effective tool for the support of educational processes.

Innovative tendencies in foreign language learning and teaching focus on the practical application of several teaching methods. Understanding the psychological mechanisms of learning a foreign language enables teachers to become more flexible, creative and empathic and to create learning environments in which students can involve their full potential and develop their language skills most effectively. In particular, the constructivist principles, basic characteristics of the constructivist approach and the resulting challenges for learning languages in a technology-enhanced environment are discussed. The main focus is laid on cooperative learning and blended learning.

Also discussed are brief characteristics of guided independent learning, distance learning, flexible learning and the possibilities of individualized concepts of instruction with the use of ICT aimed at improving the quality of teaching/learning of foreign languages.

The importance of applied research for developing innovative language learning materials for directed self study via ICT with respect to intercultural awareness and communication are stressed.

The article comprises pedagogical-psychological, psycholinguistic, didactic and linguistic approaches on theoretical as well as practical levels. Examples of progressive educational approaches using information and communication technologies in distance learning, e-learning and blended learning are presented in reference to the results of international European language projects in which the authors from the Department of English Language and Literature of the Faculty of Education of Comenius University in Slovakia have been participating since 1999 (Comenius Blau, Socrates Lingua – Exchange, Leonardo da Vinci – Personal Online Paths POP and EuroPaths – Leonardo da Vinci).

The recent history of foreign language teaching (FLT) is characterised by the implementation of various innovative tendencies, which reflect research findings and latest developments in various branches of study. Nowadays, one of the dominant features is the implementation of informational technologies (IT) into FLT. Even more salient seem to be a call for the humanization of FLT practice and an urgent need to get rid of surviving traditional teaching approaches characterised also by ignoring the individual needs of students. This innovative thinking is supported also by current tendencies to foster more effective interconnection with other related disciplines which shift the focus from teaching to learning (such as cognitive science, neuroscience, computer linguistics, pragmalinguistics, etc.). From our perspective they have a lot in common: They study information processing, its phases from perception to production, and the mechanisms of constructing and activating the inner representation of a target language.

Apart from studying the general features of the processes, more and more attention has been focused on individual differences in the functioning of these processes. Numerous intrapersonal and environmental components determine these differences, which are combined differently in each individual. The appropriate combination of the components results in much better learning achievements.

However, in instructed classroom FL learning it is very difficult to create an educational environment respecting individual differences, in which all students could develop their language skills effectively. Using IT can be very useful also from this perspective. Perhaps more than other educational devices, IT can help create conditions suitable for the needs of each language learner in all aspects of individual differences, i.e. different level of cognitive processes, different affective and social needs, and learning styles in particular. For example:

- Language learners can choose various learning activities suitable for their perceptual preferences (visual, auditory or kinaesthetic).
 - The tempo of work is not determined by external influences but each learner can set the tempo that suits him/her. Reflexive learners have enough time for the analytical and restructuring processes they need. Overimpulsive learners are slowed down by feedback or by the appropriate combination of tasks.
 - Purposeful sequencing and combination of learning tasks help learners maximise positive and minimise negative consequences of different levels of ambiguity tolerance and field dependency.
 - The variability of learning tasks enables learners to choose activities suitable for those with right/left brain hemisphere dominance, preferring analytic or holistic approaches, individual or group work, learners with a different structure of memory skills, etc.
- There are many other aspects of FLL that can be enhanced by means of IT, such as motivation, use of authentic materials, meeting different linguistic needs, etc., which are psycholinguistically well rooted.

Similarly to the variety of approaches and methods which are used in face to face teaching, teachers and learners in distance education have the choice of various types of virtual learning environment. How to use different activities to develop all language skills and means is relatively well elaborated in CALL methodology. From the perspective of implementing **ICT** into **teaching** foreign languages, of particular importance for potential users are various **types of virtual learning environments**, which can contribute to fulfill the educational needs of learners. In the web-based learning environment we can distinguish basically **two types of online learning environments**. One is based on **behavioral psychology**, where students are presented with information which they repeat back to the teacher (reproduction). This learning is based on individual construction of knowledge and reproduction rather than on social processes. Learning contains the idea that there is a body of objective knowledge that can be delivered to the learners through presentation and explanation and it is based on individual construction of knowledge and reproduction rather than on social processes. It is a **teacher - centered** environment. Direct instruction or presentations, drill and practice or repetition, instructional games, which are typical for this method, are recommended when the learner is inexperienced or has little or no prior knowledge of the foreign language, when recall of basic facts or automatic responses are required or when the task completion requires little or no deviation from standard practice.

On the other hand, the **constructivist approach** includes collaborative learning and creating learning situations that enable learners to engage in active exploration and social collaboration. As far as the design of the virtual learning environment is concerned, care needs to be taken to guarantee that the resources for learning are structured (a) so as to effectively scaffold learning and (b) to take account of alternative access needs and learning approaches.

Based on **constructivist theories of learning**, the online education environment can be designed on the assumption that learners themselves are an active agent and that they use social skills to undertake and complete group tasks. The facilitators should foster the learner's constructive process and not attempt to closely control the process or result.

The teacher should plan situations so that the learner has opportunities to solve realistic and meaningful problems, provide group learning activities to allow learners to interact and help by guiding and coaching. The learner needs to experience real world applications and construct knowledge. Typical methods used with constructivism are case studies or problem based learning, presenting multiple perspectives or guided reflection, mentoring or apprenticeships, collaborative learning, discovery learning and simulations.

There are issues that need to be considered when looking at the use (fulness) of new technologies in foreign language learning [10]. Language learning as well as learning in general should be described as an interactive, dynamic process, in which new knowledge is acquired when learners are placed in a situation where they can explore sources and resources rather than in a context of mere formal teaching. Rüschoff has also highlighted the constructivist paradigm as an important methodological basis for real innovation in foreign language learning, and according to him, within this paradigm new technologies need to be exploited so as to ensure the acquisition of communicative competence as well as language awareness and learning competence.

In web-based learning **task-based learning is emphasized**, not only presenting the information in a clear and logical manner but also fostering the ability to organize the information by the learner in order to absorb and practice it. Thus chunking and logical sequencing are essential. In various resources these theoretical approaches translated into activity structures are mentioned [1]:

- Problem-based learning

- Cognitive scaffolding (Piaget)
- Conversational model (Laurillard)
- Learning cycle (Kolb)
- Case-based approach
- 'Drill and practice' approach
- Apprenticeship model
- Simulation/microworld
- 'Constructivist' activity sequence (example)
- (Workshop model)

Also highlighted are these points to note:

- Most activities can be either individual or collaborative.
- Structures/sequences can be either single or multiple loop.
- Approaches can be combined.
- Many other approaches could be imagined, including some which are poorly described in the theoretical literature, e.g. based on gaming theory.
- Some approaches can be expressed as sets of activities to be included, rather than sequences to be completed in order (parallel rather than linear structures).

For illustration three **international educational research projects** related to language teaching are introduced. **The common characteristic features of the presented international European projects are the following:**

- Raising language and cultural awareness and attitudes, exploring the connection between language and culture patterns and mechanisms of perception and interpretation, awareness of similarities and differences dealing with "otherness"
- Intercultural communicative competence dealing with the rules of communication systems (linguistic, cultural, social), strategies for getting information through linguistic and cultural filters; in socio-cultural aspects
- Learning to learn beyond general classroom learning by the use of ICT to get and process relevant information on language/cultural communication from various media
- Directed self learning

In all projects the teacher's role is one of a mediator, tutor and assistant rather than instructor or provider of knowledge.

1. The BLAU Project (Socrates-Comenius II project from 1999 – 2001) was action and product oriented. Its principles and teaching precepts derived from humanistic psychology and pedagogy, including theme-centered interaction. It also drew on a constructivist epistemology which stresses the students' creative potential and independent generation of knowledge.

The pedagogical approach is based on the notion that languages are best learnt in an integrated way, based on topics or themes. This philosophy also motivated the inclusion of the activities bellow:

The following pedagogic and didactic principles were applied in the project:

- Activating all modes of perception and different sensory channels to support the learning process
- Use of different creative methods to encourage students and teachers to participate more actively.
- Visual channel: pictures and texts on the screen, the BLAU gallery
- Auditive channel: producing oral texts, listening to other people's or one's own oral productions
- Incorporation of an intercultural dimension which goes beyond vocabulary and general language exercises
- Increased use of interdisciplinary cooperation
- Students and teachers find out more about each other.

2. The objective of the European language project Exchange (Socrates-Lingua)

(www.exchange-europe.net) was to develop innovative teaching and learning resources for the Internet which could be employed in courses in the target language and help participants to improve their linguistic and intercultural skills.

The materials for language learning were structured into **modules** (German, English, French, Slovak) and they employ different didactic-methodological approaches and lend themselves to possible transfer onto further target languages and learning environments.

They were meant for groups with little language knowledge - and are offered as innovative approaches to teaching and learning. The results can be found on the Internet at www.exchange-europe.net as well as in printed form and on CD-ROM.

3. The POP project as an illustration of didactic text designed for network based teacher training

The second project within which didactic material was developed was the **POP (Personal Online Paths) project** (www.personalonlinepaths.net) (2003 – January 2005) which was a European language competence project within the frame of the Leonardo da Vinci Programme.

The objectives of the project were:

- to improve the skills of language teachers to meet the challenges set by modern technology and to utilize international co-operation in tutoring self-directed language learning
- to develop a model for transnational e-tutoring/online tutoring
- to affect teachers' attitudes towards e-tutoring/online tutoring
- to increase the self-initiative of students in language learning
- to support students in the critical evaluation of their skills and learning results, and in adopting a new way of language learning
- to improve the possibilities of receiving flexible and tailor-made language training according to a personal study plan.

The overall approach is “**learning by doing**” and it is **task-based**. The materials have been designed for the application of a combined form of presentation, i.e. for “**blended learning**”. The major contribution to the POP Project may be seen in the pedagogical content uploaded on to the platform. The platform not only includes web links to certain resources but also a number of pedagogically-oriented learning tasks.

Based on the experience with the development and application of innovative trends and methods exploiting the potential of ICT in foreign language teaching and training, a project team from the Department of English Language and Literature is partner – evaluator in another European language training programme within the Leonardo da Vinci programme. The objective of the project **Euro-paths** (www.euro-paths.net) is to enhance independent self-learning of a foreign language with the support of ICT and to develop learning materials for Finnish and Danish. These materials are focused on the needs of vocational mobilities within Europe with the application of the intercultural aspect and thus help overcome initial difficulties in foreign surroundings. Through these mobilities new possibilities are opened for young people on the European labour market.

The use of multi-media has its advantages, such as the possibility to apply concepts with elements of directed self-study and autonomous learning. In addition, it is necessary to respect the proportion between individual and cooperative concepts in the process of foreign language teaching/learning.

The growing use of ICT in everyday life, and the demand for e-learning and distance learning in general, brings new challenges to our educational institutions: workloads and time used for instruction must be re-evaluated. Planning will be more emphasized compared with traditional teaching and consequently the time used for tutoring has to be redistributed on a totally new basis. This, on the other hand, results in more flexible working hours of the teachers due to the increased amount of time spent in planning.

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