



*Theory and Practice in English Studies 3 (2005):
Proceedings from the Eighth Conference of British, American
and Canadian Studies. Brno: Masarykova univerzita*

E-utopias: Cross-curricular Teaching through Multimedia CD-ROMs in Primary Education

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At the beginning of the 21st century computer technology is often used in classrooms to support instruction and foreign language classrooms are no exception. Recently it has also been recognized that learning a foreign language and eventually mastering it is more than acquiring language skills; it is an extremely complicated contextual and social process. The idea that language learning also involves humans relating to one another in effective and productive ways both contextually and socially has become by now dominant over older notions of language as a body of knowledge that can be broken down into smaller pieces – topics, words, grammar rules etc. Teaching methods have also changed accordingly. With an understanding of language as a social and contextual entity, and language learning as a lifelong learning process, language teachers tend to engage their students in special, socially and contextually meaningful activities, providing them with ‘enhanced input’ (Meskill 2005: 46). In this kind of learning speech, sight, movement, and hearing can unite.

The Cambridge Dictionary of Computing defines the word ‘multimedia’, as a ‘human-computer interaction involving text, graphics, voice and video’. This description seems to be in perfect accordance with the previously outlined feature of language learning, especially if we consider another reinforcing statement by Rob Higgins that “In computer-mediated communication the emphasis is on interaction between humans to connect with one another” (Higgins1991). Thus multimedia CD-ROMs are not only means of a spectacular show but as a teaching aid they meet all the requirements posed by modern concepts of learning in general and language learning in particular.

The 11-14 year old primary school population represents the age when children have perhaps the widest range of interests and they demonstrate the most admirable variety of

abilities to synthesize their knowledge. In addition, most of them at this age are already regular and confident computer and internet users. Due to these characteristics it is likely that the multimedia CD as a teaching device has the potential to become popular with this age group and it will benefit the teaching of foreign languages as well as of various other subjects including history, geography, biology, health science, art, literature and music.

The multimedia CD-ROM is able to link all these subjects and thus it becomes a helpful device in exploring the benefits of cross-curricular and cross-cultural (English-American-Hungarian) learning. The multimedia CD-ROM offers learners an opportunity to acquire and practise special skills. Children today do not only have to learn their school subjects very well and master foreign languages, but in order to be successful in today's internet-connected global society they also have to learn how to fill in forms using their computers, how to search for information on the internet, how to look up words in an electronic dictionary, how to do various computerized tasks (drawing, colouring, gap filling, selecting, matching etc.) and how to do computerized tests. These types of tasks are all offered in an educational multimedia CD-ROM and doing them will enable learners in their future lives to communicate effectively via computers in computer conferencing, emailing or communicating with colleagues via an electronic bulletin board system.

In addition to enhancing the cross-curricular and cross-cultural aspects of learning, the CD-ROM encourages autonomous learning as well by demonstrating that learners also must 'learn to learn'. The ability for autonomous and ongoing (lifelong) learning is one of the most significant benefits children can gain from using foreign-language multimedia CDs. This type of benefit, the necessity and ability to learn to learn, will outlast the gains they can get from one particular lesson or one school subject or from the mastering of the essential vocabulary or the grammar of any foreign language.

Most human work involves both individual effort and group participation. The 'personal computer' and its common applications including database managers and wordprocessors mostly require people working independently. Today computer-supported cooperative work (abbreviated CSCW) has become increasingly important in life and work. Document sharing and computer-mediated discussions in support of group work are generally on the rise if we consider all forms of computer-mediated communication.

By using multimedia CDs children are also prepared for this aspect of their futures since the cross-curricular multimedia CD offers possibilities for a variety of pair, group and class activities as well as for project work. This way the CD-ROM encourages collaborative learning as well. In the modern world, when grown, our children will increasingly need the ability to communicate and collaborate with others. The collaborative learning skills our children might acquire by using multimedia CDs might be a key to their future professional and private success. By using information technology and multimedia devices our children can gain not only topic-based knowledge but they can also learn how to do project work, they can practise collaborative communication and develop teamwork skills as well.

With financial support from the Világ-Nyelv / World-Language Programme of the Tempus Public Foundation, we created supplementary teaching materials covering the following topics:

- The Wanderings and the Conquest of the Hungarians (History)
- The Southern Great Plain (Geography)
- The Peak District (Biology)

Our aim was to provide subject knowledge and vocabulary in English about the above mentioned topics. These CD-ROMs are not for bilingual, but for monolingual classes, where the aim is to teach only part or some parts of the lessons in English. The History CD-ROM is

for 5th or 6th graders, while the Geography and the Biology CD-ROMs are for 7th and 8th graders.

One of the greatest challenges we had to face when preparing our CD-ROMs was tailoring them to the language levels of upper primary pupils. In order to successfully tackle this problem, we carried out a series of piloting tests.

The vocabulary used in the CD-ROMs was piloted in two Szeged primary schools, one of which was the SZTE JGYTFK Practicum Primary School, where pupils are exposed to 3-4 lessons of English per week, starting from grade 3; the other being the Petőfi Sándor Primary School, where pupils have 2-3 English lessons per week, from grade 4 onwards. The level of English of the pupils of the Petőfi Primary School is somewhat lower, which was the reason behind the differences in their performances in the X-LEX test we carried out. This test was developed by Jim Milton at the University of Cardiff, Centre for Applied Language Studies.

The pupils were given the complete list of the vocabulary items from the CD-ROMs, and they were invited to underline all the unknown words from the list. The results for the Geography X-LEX test are shown in Tables 1 and 2.

Table 1 Results of the piloting test for the Geography CD-ROM in the SZTE JGYTFK Practicum Primary School, Szeged, Hungary

Number of unknown vocabulary items (out of 257)	% of unknown vocabulary items	Number of pupils	% of pupils
0-9	0-3.5	0	0
10-19	3.8-7.4	5	8.7
20-29	7.7-11.3	11	19.2
30-39	11.6-15.1	17	29.8
40-49	15.5-19	16	28
50-59	19.4-23	5	8.7
60-69	23.3-26.8	1	1.7
70-100	27.2-39	2	3.5
Above 100	39-	0	0
Total	100	57	100

Table 2 Results of the piloting test for the Geography CD-ROM in the Petőfi Sándor Primary School, Szeged, Hungary

Number of unknown vocabulary items (out of 257)	% of unknown vocabulary items	Number of pupils	% of pupils
0-9	0-3.5	0	0
10-19	3.8-7.4	0	0
20-29	7.7-11.3	1	2.5
30-39	11.6-15.1	8	20
40-49	15.5-19	9	22.5
50-59	19.4-23	6	15
60-69	23.3-26.8	2	5
70-79	27.2-30.7	6	15
Above 80	31.1-	8	20
Total	100	40	100

The results demonstrate that most of the pupils indicated 30-60 unknown vocabulary items out the given 257. The bulk of the unknown words were technical terms, and there are special tasks on our CD-ROMs aimed at familiarising the users with technical terms.

Subject teachers were also invited to assess the CD-ROMs, and provided considerable feedback. English teachers also provided us with some feedback concerning the use of the CD-ROMs in the ELT classroom.

Some randomly chosen parts were also taught by teachers of the two primary schools, which has also helped us in revising our materials.

The World of Plants and Animals: a Field Trip to the Peak District is a variety of supplementary materials designed primarily for biology teachers, but it is also useful for teachers of other subjects. The texts are written and narrated in English. When selecting the core biology topics several subject teachers and a series of biology textbooks (the Hungarian Mozaik series and the English Letts Educational series) were consulted.

The discovery of the main features of the world of plants and animals is embedded in a frame story, namely a class field trip to the picturesque English Peak District, the first of 11 national parks in Britain. The cross-curricular feature of the material is present throughout the units of the CD since teachers and learners make biological, geographical and environmental discoveries together, or occasionally on their own. An additional feature of this frame story is to share facts and ideas about national parks both in Britain and in Hungary and to raise environmental issues as well. These features, as well as the extensive use of computerised maps, provide the necessary link between biology, geography and environmental studies. The topics of feeding and food chains also generate cross-curricular discussions and can eventually lead to the discussion of health science issues including the subtopics of health food and the importance of caring for our teeth.

Many children like 'hands-on' activities. For them and for the creative arts and crafts teacher there is a 'Do -it-yourself' task included, which is the step-by-step making of a bird feeder for the schoolyard.

The material on the CD also explores samples of children's literature, which, in addition to making biology lessons more enjoyable, can be exciting activities of topic-based literature classes or of language lessons as well.

Where possible, cross-cultural topics are also explored within the CD ROM. Among these are the national parks in Hungary and England, the names and habitats of some typically English and Hungarian flowers and species of birds. In addition, the topic of hibernation will open a cross-curricular and cross-cultural link toward the discussion of the celebration of Groundhog Day in the United States of America.

The wanderings and Conquest of Hungarians is the History CD-ROM in our series. The biggest difficulty we had to face was to find the appropriate simple language. We always had to keep in mind that the material was aimed at 5th and 6th graders, whose language knowledge was not very broad. The first version we wrote seemed to be too complicated, with long sentences and difficult structures. The other problem for me was to use only two verb tenses: past simple and past continuous. In this work prof. Jim Milton helped us and showed how to make the sentences shorter, and synonyms to use.

There is always a short text and different tasks. The CD-ROM deals with the following topics:

- The Hungarians
- The Plunderings of the Hungarians
- The Origin of the Hungarians
- Life in the Early Homeland
- The Breaking up of the Finno-Ugric community
- Life in Extended Families

The Ancient Hungarians
Wanderings in the Puszta
Life on the Steppe
Extended families, Clans and Tribes
Levedy
Etelköz, between the River Dneestr and the River Dnepr
The Tricky Hungarian Warriors
The Way of Life in Etelköz
Peoples in the Carpathian Basin before the Conquest
The Conquest
The Settlement
The Faith of the Hungarians

The Geography CD-ROM deals with the topic of *The Southern Great Plain*. The Southern Great Plain is one of the seven regions of Hungary and is made up of three counties in southeastern Hungary, with a population of 1,367,000. According to the National curriculum, there are 4 lessons for studying about the Southern Great Plains in grade 8.

The CD-ROM covers the following nine topics:

Location
The external forces shaping the Great Plain
The time-machine (geology)
The weather
Water
National Parks
Agriculture
Industry
Transport

Each of the topics has an introduction, where the technical vocabulary of the topic is introduced, followed by a set of tasks based on reading materials, aimed at familiarising the pupils with the topic. A wide variety of task-types is used, including multiple choice, true or false, etc. These tasks make a CD-ROM a useful addition to the subject classes, it can be usefully employed as a means of motivation, or as a tool for review.

The CD-ROM can also be used in the ELT classroom, as the tasks aim at developing all four skills. There are pairwork and groupwork activities aimed at developing Speaking skills, the reading materials can also be used as listening tasks.

Another merit of the CD-ROM is that it can be used to bring local colour to the ELT classrooms, making it possible for pupils to talk about their own country and the geography or economy of their town or village. We considered this particularly important, as that is what is usually missing from the ELT materials most frequently used in Hungary.

Why a Utopia?

Even though the CD-ROMs are tailored to the needs of pupils and are useful and enjoyable means of studying, there is a set of factors that made us think of the project as utopian for the time being.

First of all, the lack of adequate IT facilities in primary schools make the use of CD-ROMs a dream, rather than reality. Second, subject teachers might not have the necessary English skills to cope with the challenge of teaching the subject classes, or parts of the subject classes in English.

Another problem is the question of time, the teachers have a very demanding curriculum to follow, and it is very difficult to find time for tasks and exercises from the CD-ROMs.

Some of these challenges can be met, however, through the restructuring of the curricula, and also through the better education of subject teachers.

In summary it can be concluded that the multimedia CD-ROM as a teaching device and supplementary teaching material has the potential of becoming popular with learners of the upper primary level and, due to its implied cross-cultural and cross-curricular characteristics, it can simultaneously enhance the efficiency of the instruction of various subjects in an attractive and fun way. It can also improve learners' language skills, and, at the same time by developing autonomous and collaborative learning skills, it can prepare learners for the demands of our information-technology based society.

References

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