SOME FEATURES OF THE INTERACTIVE WHITEBOARDS FOR GEOGRAPHY TEACHING IN SLOVENIA

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ABSTRACT

Education information society in the 21st century requires new teaching approaches which will effectively promote the development of learning skills. The ability to find, analyse, critically evaluate and rationally use different information's is one of the key pillars of learning competences for the future. If we want to make a difference in the educational system, which will be followed by the up to date society, we must also enforce and modify forms and methods of teaching work, teaching aids (ICT) as well as teachers' training courses. In the article we present some features of interactive whiteboards in geography lessons as it represents a relatively new technology in Slovenian schools. ICT education equipment in schools will be presented as well as opinions of Slovenian geography teachers about their strengths and weaknesses as well as problems which they face in teaching geography. Their diverse personal experiences are an important guideline in designing future geography teachers training courses.

Key Words: interactive whiteboards, teachers, geography.

INTRODUCTION

Various documents (The Lisbon Strategy, 2000; Key Competences for Lifelong Learning – An European Reference Framework 2006, White Paper on Education in RS 2011), supporting the introduction of modern information and communication technology (ICT) in education, setting in front of the Slovenian teachers the mission to develop students' skills in digital literacy so how they are able to follow the needs of modern society, based on rapid access to some new information and their movement and the use of the ICT in everyday life. Also, it is important to think about ICT in the professional life of every individual.

The use of ICT has increased significantly in European schools during the period 2005 till 2009 as evidenced by the survey (Benchmarking Access and Use of ICT in European Schools, 2006) on the use of ICT in primary and secondary schools. 96% of all schools in the EU25 have an internet access, of two-thirds (67%) of schools have accesses to a broadband Internet. Results for individual countries are quite different. 90% of schools in the Nordic countries, Estonia, Malta and the Netherlands have a broadband internet, this is among such schools in Greece, Poland, Cyprus and Lithuania is much less (35%). In Slovenia, they have an internet access in all primary and secondary schools. 85% of Slovenian schools have a broadband internet (Gerlič , 2010).

ICT IN EDUCATION

Reports from Europe's digital Competitiveness (2009) show how all EU Member States are aware how information and communication technology (ICT) are increasingly necessary to be introduced in the educational process and the Information Society to train 21st century learners. ICT changes the education system and enables or requires the development of some new teaching approaches. Therefore it is called a »transformational ICT«. (Bučar, 2011, note quoting Gavin, 2005) Technology can be used in a very different field of education; teachers and students use it in lessons, technical staff with the administrative work, director

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of the organization of schools, etc. In line with the European policy, Slovenia has adopted in 2007 » SI2010 Strategy for development of information society« and in this paper has undertaken to strengthen research and development in ICT(Brečko & Vehovar, 2008).
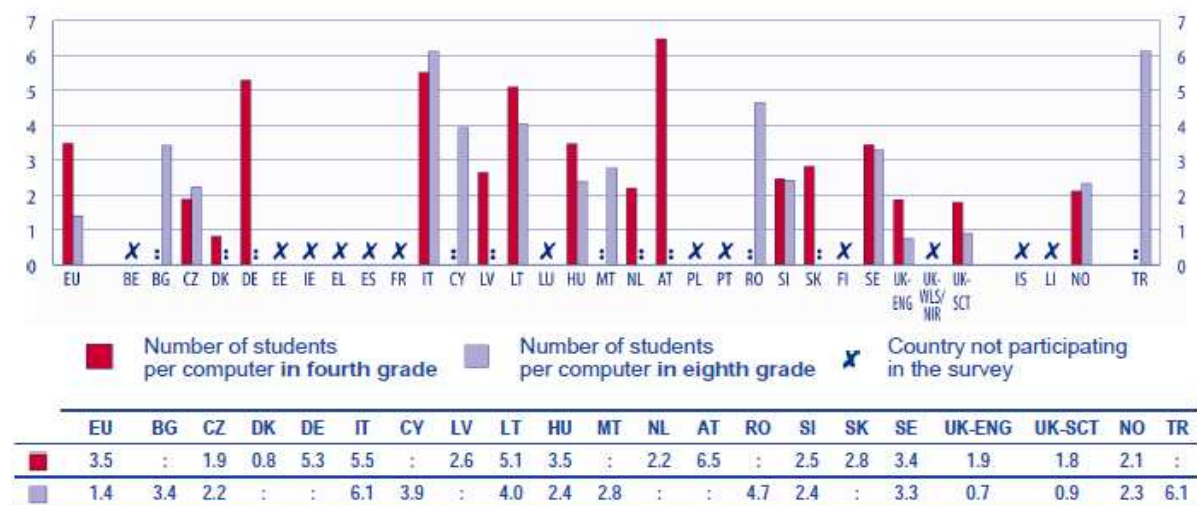
THE PREVALENCE OF THE USE OF INTERACTIVE WHITEBOARDS IN THE CLASSROOM

From international research (Key data…2004 and 2011, SITES 2006) we can conclude how all the schools in European countries has been very differently equipped. A decade ago, in the survey Information and Communication Technology in European Educations Systems (2001) observed how in this period, European countries can be classified into: a group of countries where schools are well equipped with some basic computer technology, a group of countries which aim is to develop school web network. Third groups, as are those countries where the lack of schools equipped with the most basic ICT. According to all available data from the Slovenian research (Gerlič 2005, Gerlič 2010a , Gerlič 2010b) suggests that Slovenia could in the time of the study (2001), ranked second in the group. Today, ten years later, we have observed some significant progress. Ten years ago, schools in Slovenia struggled with the installation of basic hardware and software, today as in other developed European countries the basic ICT installed. Now the emphasis is on equipping schools with broadband Internet and other online technologies such as I-boards (Bambič, 2009).

In an international study Key data on Information and Communication technology in Schools in Europe (Key Data…, 2004) found how most European countries does not provide for the relationship between the number of pupils and the number of computers. The exceptions were the United Kingdom, Malta and Slovenia, where they made recommendation that the optimal ratio of 1:7. The recommendation of the Slovenian Ministry is 1 in 5, which means at least one computer in each classroom (Bambič, 2009).

In 2010, repeated surveys (Bambič, 2009) found a significant increase in the number of computers in schools, according to the year 2000. At least half the students attend school in the EU, in which is at least one computer per two students. Also differences between countries in ICT are now much lower than ten years ago. On average, the best equipped schools are in the UK, where the number of computers in schools is higher than the number of students. In 2007, in most of the European counties was one single computer for 2 or 4 pupils, in Slovenia there is on average one computer per 3, 37 children (Key Data…, 2011).

Table 1: The average number of students in the 4th and 8th class on one computer. Report to school principals in the EU 2007th

	EU	BG	CZ	DK	DE	IT	CY	LV	LT	HU	MT	NL	AT	RO	SI	SK	SE	UK-ENG	UK-SCT	NO	TR
■	3.5	:	1.9	0.8	5.3	5.5	:	2.6	5.1	3.5	:	2.2	6.5	:	2.5	2.8	3.4	1.9	1.8	2.1	:
▨	1.4	3.4	2.2	:	:	6.1	3.9	:	4.0	2.4	2.8	:	:	4.7	2.4	:	3.3	0.7	0.9	2.3	6.1

Source: IEA, TIMSS 2007 database.

According to the Slovenian research (Gerlič, 2010b) is in Slovenian primary schools more stationary computers (82, 2%) than laptops (15, 8%). Most computers have an older processor and accessories (47, 7%), only 11, 2% of computers have newer processors with some optional equipment. On average, the Slovenian primary schools have one computer to 8,4 students which is also good on a European scale. In the same research (Gerlič, 2010b) found out how in 2009, almost 16, 8% of Slovenian primary schools have whiteboards. Their acquisition is planned with 70, 6% of surveyed schools. But only 7, 8% of surveyed primary schools have interactive plates, 2, 5% of them have responders and 10,7% of them are planned to purchase this equipment. It can be said how Slovenian schools are well equipped with ICT, while satisfaction is slightly modified when we questioning the frequency of its use in the classroom. Reports from a national survey of ICT in 2010 (Činkole and Brečko, 2010) shows that the respondent Slovenian teachers in December 2009 using most often during the lesson a computer (26% each school day) and projector (22% of each school day). At least frequent they used the online classroom and the I-board (43% of teachers was never used it, 8% occasionally, 13% a few times a month). The integration of an i-whiteboard is mostly common between the 14 year olds surveyed (36% of each school day, nearly 9% of each school day), 91% of surveyed students report how their teachers never used an i-whiteboard.

Table 2: Review of frequency of use of the ICT by individual teachers in the Slovenia in 2009, according to the age of pupils.

Incidence of use whiteboard during lessons in primary schools		Pupils age												Total	
		10		11		12		13		14		15			
		n	%	n	%	n	%	n	%	n	%	n	%	n	%
	every day	0	0,0	5	25,0	0	0,0	5	21,7	8	36,4	0	0,0	19	19,7
	nearly every day	0	0,0	0	0,0	0	0,0	0	0,0	2	9,1	0	0,0	2	2,1
	several times a week	2	33,3	3	15,0	0	0,0	3	13,0	5	22,7	1	9,1	14	14,7
	several times a month	0	0,0	3	15,0	2	14,3	7	30,4	0	0,0	0	0,0	13	13,1
	occasionally	2	33,3	0	0,0	4	28,6	2	8,7	0	0,0	0	0,0	8	8,2
	never	2	33,3	9	45,0	8	57,1	6	26,1	7	31,8	10	90,1	41	42,2

Source: Činkole & Brečko, 2010

Interviewed teachers, as the most common cause pointed out how they rarely use the i-whiteboards, indicate the reason that they do not have them in their classroom and have to move students into a classroom where the whiteboard is situated. Slovenian teachers frequently use i-whiteboard in the stages of consolidation, acquisition of new material and the stage of examination. Most teachers' use, when working with i-whiteboard, material accessible from the internet and purchased already prepared material (Bačnik, 2011).

There is a relatively large gap between the equipping of schools and the use of modern teaching aids such as i-whiteboards; they also note the survey equipment at schools and the use of interactive whiteboards. Of a total of 325 teachers being taken in a survey the 237 (72, 9%) of them responded that they do have i-whiteboard on the school and almost 85 (35, 9%) of them said that they have two whiteboards in their school. The most common in Slovenian schools are Prometheans interactive whiteboards, followed by the Interwrite, Smart and

Hitachi. Schools were able to obtain the whiteboards through some national calls for the equipment being given by the Ministry of Education and Sport, and less money they invested to purchase those by themselves or with some donators help. The maximum number of i-whiteboards is situated on the upper level, in the classrooms for Math, Chemistry and English. (Bačnik, 2011)

SURVEY: TEACHERS' PERCEPTION OF GEOGRAPHY ON THE PROS AND CONS OF USING THE INTERACTIVE WHITEBOARDS IN GEOGRAPHY LESSONS

Department of Geography in Faculty of the Arts (University of Maribor, Slovenia) in the framework of practical professional training of students-future teachers of geography is deeply involved with a number of elementary and secondary teachers of geography. For efficient implementation of pedagogical practices are certainly crucial school teachers trained as mentors and proper working conditions (learning equipment), while bearing in mind the possibility of using the ICT in geography lessons. In the academic year 2010/2012 there were 27 elementary and 19 secondary school teachers, mentors to geography students in their teaching practice. In students reports we found out that in the mentoring schools in that year had whiteboard on 21 (77.7%) primary schools and on 13 (68.4) secondary schools, of which they have installed i-whiteboard in 15 geographical classrooms in primary schools and 10 geographical classrooms in secondary schools. In the 14 days of mentoring students on teaching practice, the whiteboard was used by 5 teachers (18.5%) at primary level and 4 teachers (21.1%) in secondary schools.

OBJECTIVES, METHODOLOGY AND RESEARCH SAMPLE

From the data collected within the teaching practice of students of geography, as is described in the previous national surveys, demonstrate how the Slovenian primary and secondary schools are relatively well equipped with i-whiteboards and similar to this counts also for all Slovenian teachers and also teaching a geography it can be determinate the gap between the availability and frequency using i-whiteboards in the classroom.
To better understand the reasons for this situation, we invited six teachers of geography who were mentors to students in teaching practice and are used in geography lessons i-whiteboard, in the month of June 2011, to explain us their opinion about the advantages and disadvantages of the use of i-whiteboard in geography lessons and importance of including it in the teaching of geography.

A smaller pilot study was based on the descriptive method of empirical educational research.

In participating teachers of geography had on average 8.4 years of work experience and have been using i-whiteboard from one to three years. Everybody had a university degree, basic knowledge of the use of i-whiteboard being gained in the seminars organized by the school (four interviewed teachers) or attended by an individual (two interviewed teachers). Four of them were employed in primary schools (three women and one man), and two in high school (one female and one male). The interviewed geography teachers taught in schools, which are located in North Eastern Slovenia, three of them are located in cities (two secondary schools and one elementary school), three elementary schools are located in rural areas.

Data collection was based on individual unstructured interviews, which on average lasted 20 minutes. The data were analyzed at the level of description. We have created some opinions of the interviewed geography teachers in two parts, where we have tried to point out the most frequent responses of some individuals as illustrations of written responses and its generalizations.

RESULTS AND INTERPRETATION

The importance of interactive whiteboard integration in geography lessons
In describing the reasons for the application of i-whiteboard in geography class the interviewers' highlighted two reasons. The first was linked to the development of digital capabilities of student as competencies relevant to the life and work, and the other one was on many multimedia capabilities i-whiteboards can support in terms of geography learning clearness.

Examples of responses:
I think e-learning examples are and will help to traditional teaching in the future, so I see no reason why it would not start now. Sooner or later, the notebooks, textbooks and workbooks, will be replaced by the student portable computers. I-whiteboard is one of the tools I use in teaching. Even in geography lessons, pupils get digital literal so it is right to enable them to use it. I love the technical innovations; I- whiteboard really is a challenge to bring together the teaching of geography and modern technology.

There is no better example to represent as the process of teaching geography through the i-whiteboard as created. It allows a lot of learning clearness: the picture and sound to the graphic illustration. Here is everything included.

Advantages and disadvantages using interactive whiteboards at geography lessons
When using i-whiteboards at the geography lessons the interviewers observed that in their work both advantages and disadvantages were noticed. Here are some features as: quick access to various media, occasionally showing as a preference (for easy manipulation, economical use of time), on the other side as a weakness (too fast workflow, which some students cannot keep up). The most common benefits of using they stated: increased students' motivation, varied clearness of teaching material, the variety of lessons, better educational records, updating teaching materials, the Web, working with maps, use of audio and video clips.

Examples of responses:
I can see my students being more active, they follow lessons more, ask more questions, using maps, working with silent maps, spatial performances by all that now attracts more than if they use atlases. The biggest advantage is the quick jump to multimedia material, which we use it more often and we use the wide range of diversity of multimedia material than before.

As disadvantages of using i-whiteboard it was noted: technical shortcomings (poor image, install signs demanding that everyone can see it or reach, size of signs in the concealment of large class-vision), the price of i-whiteboards and additional connections, price maintenance, along with an i-whiteboard works only one student, you must be very careful where something is, the great time spent on producing teaching bases, costly ongoing additional training.

Among the less desirable consequences of the use of whiteboard are also described:
Most students are digital faster and finds himself quicker on the big board as myself and I feel so uncomfortable.

The more hours of artificial light and strong bulbs often hurts my head. It happened that I spent a whole afternoon to prepare two lessons then in the school electricity went off.

The interviewed teachers are satisfied teaching with i-whiteboards. Reviews are showing how they are not left behind the other school subjects in terms of using the ICT especially i-whiteboards in the classroom. They do point out, how they would like to have as many examples of good practices such as cooperative learning,

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passing from one teacher to another and caring and helping to overcome the beginners uncertainty. They highlighted also many positive motivational students' reactions to practice through i-whiteboards and the possibility the students have now to experience the use of the ICT during their study, while being the students themselves they did not have the mentioned options for their education.

Opinions interviewed teachers of geography about using i-whiteboard are thus in good agreement with the opinion of their English colleagues: "Teachers report that increased student engagement is the number one benefit to teaching with this tool. The technology allows teachers to integrate multiple information streams into a coherent lesson individualized for their students. Interactive white boards provide an extraordinary opportunity to create classroom environments where students with different learning styles can engage and learn from each other. This easy-to-learn technology ensures that both students and teachers are developing 21st century skills"(Teich, 2009).

SUMMARY

Effective teaching with i-whiteboard requires skilled and motivated teachers. Especially should be aware of teaching values with i-whiteboard and its impact on education. Slovenian teachers in recent years have had the opportunity to visit the many seminars that provide training for the use of an ICT including whiteboard. The disadvantage of these seminars is the fact that there is not enough emphasis on new methods and forms of teaching. Although the Slovenian geography teachers are increasingly choosing to use ICT equipment that they have at school, they still do not feel sufficiently qualified for teaching in significant changes in the selection of teaching methods and forms of work. The most important didactic information which i-whiteboard should carry is the interactivity that makes the modern ways of communication and active forms and methods of teaching geography, which undoubtedly changes the role of the teacher from someone who relays information to the organizer of instruction. Is perhaps this "leap in teaching philosophy" is the biggest barrier to more frequent and effective use of i-whiteboards in geography lessons in Slovenia?

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