

INTERACTIVE WHITEBOARD – A MODERN EDUCATIONAL TOOL OR AN EXPENSIVE GADGET?

Abstract

An interactive whiteboard is an incredibly attractive educational tool as it is provided with functions that other means do not have (even a computer interfaced to a multimedia projector), for example, downloading notes from the whiteboard into the computer memory, playing movies with the possibility of note taking directly on individual frames, working with computer applications on the whiteboard surface. Using the above mentioned facilities, this modern teaching aid facilitates combining a traditional lecture with a presentation of multimedia materials which a teacher has. However, new educational tools require using new methods. This article is an attempt to answer a question about the place and role of an interactive whiteboard in the modern school – is it really an effective educational tool and how often is it used in the classroom.

Key words: interactive whiteboard, digital competence, teaching method.

Introduction

In the contemporary society known as the information society (T. Goban-Klas and P. Sienkiewicz, 1999, p. 35), a key role is played by technologies related to gathering and processing information. Nowadays knowledge is strategically meaningful because it is created and gained in order to be used in everyday life; therefore, more attention is being paid to investing strictly in knowledge. According to the study conducted in the wealthiest countries around the world, increase in know-how is conducive to national income increasing by as much as 25% (J. Kosmala, 2009, pp. 13-15).

The rapid development of technologies, as well as social, economic and cultural changes, demands from the school a constant transformation in order to ensure that students are effectively prepared for living in the modern world. This leads to the state's need to invest in education and schooling, particularly within the scope of improving digital competence.

The society is subject to a digital gap and to a division into digitally skilled people and those digitally incompetent. This sort of shortages may lead to reduced income, a lower social position and even to being unemployed and, in consequence, to social exclusion. Although this risk affects mainly elderly people, it may also concern younger generations living in poverty and deprived of financial resources to develop these skills and digitally neglected children from rural areas (e.g. without permanent Internet access) (J. Kosmala, 2009, pp. 18-21).

Therefore, the modern school has to challenge new content and constantly changing knowledge. There is no doubt about the fact that modern educational aids allow teachers to teach in a more interesting, effective and faster way than traditional teaching tools. Nevertheless, new aids are being accompanied by new teaching methods – sometimes significantly different from the current ones.

Students who do not know the world without new technologies perceive and use these technologies differently than their parents or grandparents. Since the content is influenced by language and communication channel, the school should apply digital technologies to a greater extent for the sake of making the educational mission effective. For the young generation, the Internet, smartphones and laptops appear to comprise an integral part of reality, inherent in their experience of everyday life. The school deprived of these elements will not be effective in reaching young people.

Introducing digital tools to schools is not intended to eliminate the need to teach or to reduce the teacher's presence in this process. The purpose is to provide support to the teaching process. Namely, modern technologies are expected to meet the basic school targets, including the core curriculum, in the best possible way. Information-communication technologies should become an instrument providing support to students and teachers alike so that both groups would easily fit into the information society.

Interactive whiteboard as a modern educational tool

From the perspective of the theory of education, a computer and an interactive whiteboard should be treated as a modern educational tool. In accordance with the typology, this tool should be classified as a compound instrument (W. Okoń, 1998, p. 303) and found in the category of technical teaching aids automating the educational process (Cz. Kupisiewicz, 2000, p. 180). Its use should contribute to the improvement of the teaching process and to the achievement of optimal educational results.

As opposed to other modern educational tools, an interactive whiteboard is not intended for self study but to be used by the teacher with the whole class. This board ensures so much more than just a sizeable and attractive presentation of an image on a computer screen. It is a touch-sensitive device similar to a board, connected to a computer and multi-media projector (J. Gage, 2005, pp. 3-5). It has functions which cannot be found in other aids, for instance, displaying materials with the possibility of note taking directly on them, including sending and printing. The above mentioned properties of this modern teaching instrument are conducive to comprehensive teaching and save the teacher's time due to the option of multiple uses of prepared materials (D. Glover and D. Miller, 2001, pp. 257-278). An interactive whiteboard seems to be a valuable device in the hands of an experienced teacher, which allows him or her to modify a lesson plan to meet the needs and abilities of students (R.J. Marzano and M.W. Haystead, 2009, p. 28). A teacher who uses IWBs on an everyday basis has an opportunity of active modification of a task, presented images and statements according to the level and subject of students' interests. Interactive surface of the whiteboard enables direct contact of a student with the presented content, thus making traditional teaching more attractive due to touch-kinesthetic incentives. The multimedia aspect of this device allows teachers to have lessons abundant in examples, presentations, experiment simulations with students' direct participation. The high educational efficiency of this tool results from the possibilities of creating a personal, electronic base of educational materials, modifying selected elements of lessons while they are conducted as well as easily changing their structure through referring to previous notes (K. Oleksińska, 2011, pp. 147-165).

According to the report of research conducted for the European Commission (Survey of Schools: ICT in Education, 2013), Poland is placed below the average, but not the last, in the ranking on the use of digital technologies at school. The data for the report was collected in the years 2011-2013

in 31 countries (27 European Union countries plus Norway, Iceland, Croatia and Turkey). The study involved 190 thousand respondents including teachers, headmasters and students. The report revealed that there are more than 200 students per one interactive whiteboard in Poland. The data does not appear to be optimistic, as it reveals considerable shortages in school stock of interactive whiteboards. Therefore, it is not easy to discuss the use of new technologies for teaching purposes because as many as seven classes are forced to use one whiteboard. Given such circumstances, classes with the use of an interactive whiteboard take place alternately, or the board is used for teaching only one subject.

New tools – old methods

The quality of education which uses digital tools has a major influence on a comprehensive assessment of the situation. The teacher's role in the world determined by technological development is constantly changing. The teacher enters another dimension of work and requirements, often distant from their own experience of education. In consequence, there appears a range of new problems which need solutions in order to fulfill the expectations placed in the teacher. In the modern school, the teacher is supposed to provide students with tools facilitating lifelong learning. Additionally, the teacher should help improve the skills necessary in the information society.

Education which applied an interactive whiteboard connected to the computer changes the way of perceiving the teaching work in the first place. It provides the opportunities of creating own base of various teaching aids which make lessons more attractive and motivate teachers to have a creative attitude to their job at the same time (A. Karyń, 2011, p. 175). Teachers who use an interactive whiteboard in the class, enable students to understand mistakes, thus allowing them to be convinced of being able to sort out a complicated problem.

A sample survey conducted in the spring in 2014 among 64 teachers from two primary schools in the area of Dąbrowa Górnicza revealed that the subjects used interactive whiteboards sporadically or never as opposed to the information provided by reports developed by the Ministry of Administration and Digitalization (*Cyfrowa szkoła*, 2013). Lessons are usually performed in a traditional way using expository methods. Besides, many teachers show an ambivalent attitude to a computer and interactive whiteboard – they are not able to accept the

viewpoint concerning the teacher-student occupational values, perceiving this cooperation as replacing the teacher with a machine. Apparently, such a situation results from the fact that there is only one interactive whiteboard available per each school – in one school the whiteboard is in the first class, whereas in another the board is in the mathematics classroom. This considerably limits the chances of other teachers using the interactive whiteboard in their classes.

Apart from that, it seems that in some cases the use of modern technologies pushes education towards unimaginative orders. Technologies, which can be used to involve, motivate, to support discussion, learn together in a group, are usually used as a reward for good conduct or accomplishing a task before other students as the surveyed teachers who had a permanent access to an interactive whiteboard reported. Apart from that, some teachers use the whiteboard to write on it with dry-erase markers and this way they also join the group of people applying modern technologies in practice (Figure 1).

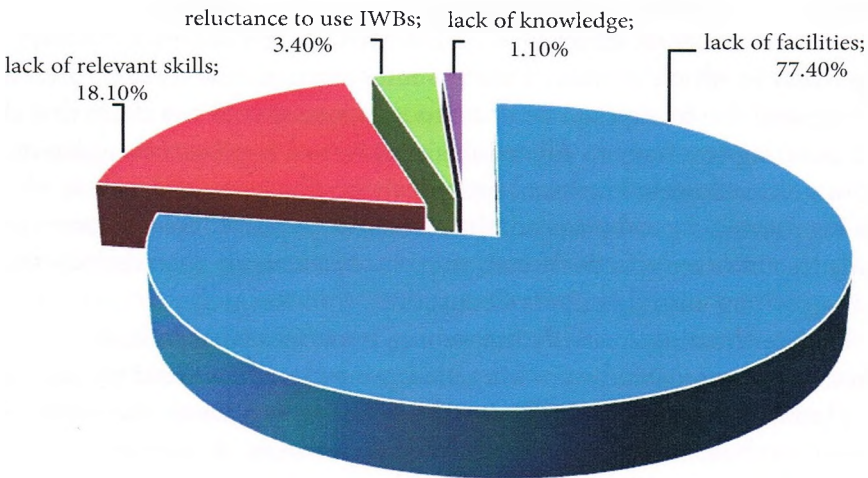


Figure 1. Barriers to the use of an interactive whiteboard

Source: author's research.

The gap between traditional teaching forms and technological development is increasing. More and more often students do not approve of the method in which they are taught, whereas teachers are facing huge challenges of orienting their work towards information-communication technologies.

School subjects cannot be taught without the use of the latest technologies. Teachers should be technologically competent while their digital skills should improve.

Curricula for individual school subjects should be developed in a new way in order to be integrated with the latest educational technologies: computer, interactive whiteboards, multimedia projectors, e-learning courses and interactive software. The pillar on which education should rest these days is preparing a student for the above-mentioned lifelong learning. For this purpose, information-communication technologies appear to be helpful as their use teaches gaining knowledge and collecting data individually. Hence, a school teacher should not be regarded as the only source of knowledge but as someone showing the way how to gain knowledge and orienting students towards the right path. If all information can be gathered clicking a few times, learning pure facts and dates makes no sense. Education should be oriented towards problem solving and independent thinking.

Teachers should change the way of thinking about education, not only to use technologies in order to do the tasks they have done so far (digital version of paper materials), but rather to begin teaching completely differently, in a manner that would be impossible without the use of modern technologies. In the world in which so many business lines and professions have been utterly redefined due to appearance of computers, one should not claim that the way of teaching (contrary to education alone) is, to a large extent, resistant to emerging technologies. However, everyone who has been in the class where technology serves a good purpose, the teacher is competent and creative and digitally resources are effectively used to promote education soon realizes there is nothing wrong with this kind of education.

Underestimating creativity in teaching is manifested by lack of a creative and innovative approach: to teaching, designing the educational process and tools, planning teaching programs and methods. At a time when children can use a computer before they learn to read and write, it is more and more difficult to involve pupils in the topic of a lesson. This is where edutainment (education plus entertainment) helps. This recently fashionable neologism may become a synonym to modern education supported by widely understood entertainment as the method of preventing school failures (M. Piechota, 2009, p. 204). Obvious as it seems to be, creating another attractive performance cannot be a goal in itself, but it should be used to teach valuable cognitive values (educational) in an unconventional way.

Using an interactive whiteboard as a tool to support traditional pedagogy based on teaching through giving instructions is a basic model of using

this interactive tool. A teacher has a lesson plan and his or her task is to instruct students what to do at a certain moment. Students and teachers rely on textbooks in which subsequent units are connected with certain subjects.

In this model, a vast majority of the knowledge transfer takes place in the classroom. The teacher concentrates on discussing a planned topic by delivering a presentation or a lecture, sometimes involving students in a discussion. Here, information technology is incorporated in a traditional form of education. A teacher's lecture is frequently supported by a multimedia presentation displayed with a projector, usually prepared using PowerPoint. The teacher may diversify lesson activities using such multimedia as videos downloaded from the Internet or on a CD attached to a textbook. In such circumstances students play a role of passive observers. As in the case of a traditional lecture or talk, students are expected to absorb knowledge passed by their teacher. It is the teacher that decides about the sequence of the content being transferred and the best form of communication. Communication of knowledge is addressed to all students regardless of their cognitive preferences or individual skills and speed of learning.

As the respondents revealed such a form is most often chosen on account of the class size (ca. 30 students). The use of visual tools increases the opportunities for a better involvement of students. When the teacher speaks while students can see the presentation at the same time, this positively affects both visual and auditory learners. In this model, technology can be also used to check knowledge usually in the form of traditional questioning or tests. A student is asked to approach an interactive whiteboard instead of a traditional blackboard. The weak point is low involvement of students. The role of passive observers does not contribute to activating the cognitive structures and it does not enhance the internal motivation. As a result, students remember very little and often do not know the reason why the content passed to them should be significant to them. Hence, the efficiency level is very low. The key disadvantage of this approach is nearly a 100% uniformity of teaching. All students learn the same thing at the same time using the same methods.

Conclusion

Life in the modern society at the beginning of the 21st century brings new challenges not only to those who have just been born, but mainly to all slightly older people – “digital immigrants” forced to live in these times more or less voluntarily. Digital revolution has achieved a sizeable proportion and

school should not ignore this fact if it still wants to play an effective role of an educational institution which may provide students with skills allowing them to function in reality as well as – one should not forget about – in the virtual world. The fewer modern technologies in education, the more the school departs from the real life, thus leading to unnecessary work. Another issue concerns the question if an ideal situation corresponds to the real circumstances. However, even leaving aside the school equipment, the most significant factor includes teachers and their teaching methods within the scope of using ICT for educational purposes. This often consists of only 30 obligatory teaching periods of information technology over the entire period of study. It is the only opportunity for future teachers for a contact with modern technologies during the process of gaining teaching competence, so how are they supposed to use these technologies in the educational process if they have not experienced other uses of computer during lectures or classes other than a presentation, whereas teaching practice is performed under the supervision of “digital immigrants”.

At the same time one should not hope that pupils will master the proper methods of using technologies and develop rules of effective and safe functioning in the digital world on their own. Even with relatively good abilities to use digital tools, pupils are not always able to assess the merits of available materials. This is also what they should be taught at school. The school in which – according to the conducted research – most teachers are afraid of working with digital technologies or, even if they want to, they simply cannot use them as they lack relevant competence or because of organizational limitations.

Besides, it should be emphasized that even in the best furnished school the use of modern facilities may be insufficient, whereas the school which is provided with very little equipment can, in turn, make the maximum use of the potential of these tools. The key factor which determines the use of educational technical tools at school is the approaches and skills of teachers. Very often schools do not use available resource to an optimal extent.

When standing next to the interactive whiteboard, the teacher has a lesson, uses a computer and controls pupils' work, which may provide better conditions for team work. The elements which appear in the whiteboard can be seen by all pupils, enabling active cooperation of pupils and developing a sound competition, which considerably improves teaching efficiency. It is so much easier to use modern technologies in the classroom, provided that they are available on an everyday basis and not only occasionally. After all, one should remember that having technology on hand does not necessarily mean it is used. An interactive whiteboard has

the chance of becoming a synonymous to new digital classrooms which will revolutionize the educational form. Under the worst scenario, it may only serve as a catalyst which will lead schools towards work automation (E. Baron-Polańczyk, 2011, p. 35).

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