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Multimedia in pre-school education

Introduction

Pre-school children undergo an intensive developmental process. The physical, psychic, emotional, social-moral, as well as religious development, takes place in the multimedia space, which is the living environment of a contemporary human being. In this article the authors undertake an academic reflexion on various ways in which the multimedia are used in pre-school education, paying special attention to possibilities resulting from the use of an interactive board. The experiences of the 26th M. Konopnicka Primary School with Pre-school Units in Dąbrowa Górnicza have proven helpful because that educational establishment accomplished successfully a professional, Polish

nationwide program "Digital school". The authors have reviewed the literature on using the multimedia in education. They have also noticed offers for pre-schools which publishing houses and internet educational platforms have at their disposal. On the base of these observations and interviews with the teachers of the 26th Primary School in Dąbrowa Górnicza, possibilities of using the multimedia in pre-school education have been shown. Therefore, the aim of this publication is to show a practical use of the multimedia at work with a pre-school child.

The multimedia – the review of chosen standpoints

Let us first address the question: What are the multimedia? The answer to this question was searched for in works of such researchers of the topic as: J. Gajda (2010), M. Gołaszewska (1999), J. Bednarek (2006), J. Juszczyk-Rygałło (2013), D. Monet (1999), J. Morbitzer (2002/2003), H. Basaj, A. Borowiecka, M. Borowiecki, B. Boryczka, G. Gregorczyk, D. Janczak, W. Jochemczyk, K. Olędzka, M. Pawlik, I. Rudnicka, A. Samulska, J.A. Wierzbicki, J. Wierzbicki (2009) and J. Skibska (2014).

Gajda (2010) describes the multimedia as

> the technical means whose base is a computer in the network, with software, connected to other media such as a monitor, z VCR player, a CD player, a scanner, a printer, a microphone, which makes it possible to use and combine any various texts taking their codes into account, as well as to process, create and distribute them via the Internet. (p. 21)

Whereas, Gołaszewska (1999) claims that "the multimedia (otherwise the electronic media) can be defined as «various audio-visual means» – a text, a sound, a picture, an animation – being complementary to one another and being used in one message" (p. 19).

According to Bednarek (2006), the multimedia system is: "any IT system being able to process, store and distribute the data in the form of sound, moving pictures, photos, computer graphics and texts" (p. 46). But he also draws attention to a very important attribute which is the user's interaction with the system.

The multimedia is also commonly called new media. According to Monet (1999), from the technological point of view, they describe "the integrated interactive media" (p. 8).

Another study says that: "the multimedia […] has the dual nature. It may turn out to be one of the most important means of educating, as well as the leading one in the entertainment. What is more, a new term has been formed – edutainment – which defines the software combining educational and entertainment elements in such a way that each of them plays a crucial role" (Basaj and others, 2009, p. 36).

Juszczyk-Rygałło (2013) thinks that multimedia are "didactical means, which educate and give fun, ideally fitted into a child's development time. Because of the possibility of simultaneous influence onto various senses in multimedia education, a lot of channels absorbing knowledge and skills are started" (p. 82). Therefore, in her opinion, the multimedia in pre-school education should appear naturally from the very beginning of education, which is methodically suitable for teachers and very attractive for pupils. It must be remembered that it has to be adjusted to children's perceptive abilities.

Bednarek (2006) draws teachers' attention to the fact that using the multimedia activates multi-sense cognition, which at an early stage of a child's development, plays a very important didactical part, therefore: "in this process […] transferring information happens in the way of activities through using active means (natural objects and model), in the way of pictures (visual and audiovisual materials) and in the symbolic way (verbal and graphic materials)" (p. 86).

Morbitzer (2002/2003) has a different attitude towards the multimedia and says that using it is "more like admiration of the achievements of the contemporary technique than an expression of appreciation of its educational capabilities" (p. 32).

Łacina (2015) summing up the EU project entitled "Competences of female and male teachers as an element of building an educating organization and a local educational strategy in the Ostrzeszow county" claims that the multimedia is modern and constantly developing engineering and IT solutions which more often and more completely link various forms of messaging: a sound, a picture, a text or an animation (p. 2).

It is difficult to doubt that multimedia may be excellent didactic help but as long as it is used rationally, which results from the functional theory of learning. According to Bednarek, quoted above (2006), the basis of education is not only experience and memory, but also a possibility of acquiring knowledge from a lot of information channels and motivation, which in specific

circumstances, is a factor inspiring pupils to undertake creative and innovative activities (p. 88)

Strykowski (2003) believes that "the advantages of the multimedia education rest on the fact that it is the multi-code, multi-sense and multi-side education which activates learners" (p. 116). The quoted author also points out that the multimedia "message is carried out in many languages: in the symbolic language (verbal and graphic communications), in the language of visual, aural and audiovisual pictures, as well as the interactive media" (p. 116–117).

The variety of presented definitions of the multimedia indicates an interdisciplinary character of the described notion. For the sake of this publication, they are described as the contemporary means of social communication, which not only belong to the most dynamic and "ubiquitous" elements of the contemporary culture but at the same time, becoming a creator of new life space for a human being and the human society.

Teachers' attitude towards the multimedia

In contemporary education, the conception of multimedia education has become the prevailing paradigm. It assumes a complex use of simple and technical, printed and electronic educational media and, which is especially crucial, its functional reception which counts: aims and tasks and educational capabilities of the media itself. The basic feature of the educational material functions, as for their educational usefulness, is their numerous playability based on a very high level of the didactic material, as well as a permanent way of recording its contents. The advantages of the multimedia educations rest on the fact that it is the multi-code, multi-sense and multi-sided education activating learners. In the early education, it is very important to use modern technologies, including the multimedia educational programs, which can be used in the educational process on an equal basis as other didactic means.

It is worth reminding here about the requirements towards teachers published in the Regulation of the Ministry of National Education on 1st March 2013, concerning acquiring professional advancement degrees by teachers (the Journal of Law and Dispositions of 2013, pos. 393). As early as for a contract teacher, who does their period of training to become a nominated teacher in § 7 par. 2 pt. 3 says that it is absolutely necessary to possess skills to

use information and communication technologies at work. Similarly, in case of advancement for a certified teacher degree, a requirement in § 8 par. 2 pt. 2 concerns the use of information and communication technologies at work. The Legislator in this way has obliged teachers to use modern technologies at their work.

The multimedia is often a base of developing a didactical process in attractive forms and conditions. It is also an incentive to explain and put meanings in order. In this way, it makes it possible to use and expand the knowledge that children possess. Moreover, as Juszczyk-Rygałło says (2013) "it makes it possible to personalize the educational process, adjust the pace of development of educational efficiency to children's perceptive-receptive abilities, also those of subnormal or limited psychic and motor functions" (p. 88–89).

One of the most popular types of multimedia is an interactive board, willingly used by the teachers in the pre-school units in the 26th Primary School in Dąbrowa Górnicza. Cimcioch (2016) has used a qualitative method based on interviews with five teachers that took place at the turn of January and February 2018. For the sake of this article, the research interview was treated in accordance with Kvale's (2011) definition. In his opinion, such an interview searches for quality knowledge expressed in the everyday language. It also makes it possible to acquire various descriptions of the researched reality, referring to the researched teachers' experiences and ways of acting. The respondents, taking part in the research, have teaching qualifications to teach at this educational level, and they are at different levels of professional advancement grades (two of them are certified teachers, one is nominated, one is a contract teacher, and one is apprentice teacher starting her professional work in the pre-school).

The equipment in pre-schools

In the beginning, all the respondents were asked a question: "Is it enough to equip pre-school only with modern didactical means to be able to run classes in an attractive way for children?". The teachers in unison answered that the equipment only would not be enough. Proper computer programs are very important. Apart from MS Office pack and graphics programs, which are tools used by the teachers, another category is special computer programs dedicated to teaching in pre-schools. Łacina (2015), summing up the project co-founded with The European Union wrote that:

they are for example discs which are included in packs of books from Juka publishing house, among others: Interactive games for a 3-year-old, Interactive games for a 4-year-old, Interactive games for a 5-year-old and 6-year-old, Clever child – I am 6–7 years old, The appetite for knowledge with Socrates, The pre-school dwarfs, Interactive exercises for pre-school learners and The children's multimedia world. Moreover, the e-books are used in the pre-school, which fill in the traditional reading of fables. The fables are read by, among the others, Piotr Fronczewski and Emilian Ka-miński. (p. 7)

In Milinkiewicz's opinion: "Thanks to educational programs acquiring knowledge and shaping skills are becoming more interesting and brings satisfaction to both children and teachers. However, we must follow the rule saying that they must be propositions adjusted to their level and abilities and influence a child's comprehensive development…" (http://www.przedszkola.edu.pl). The author points out that thanks to it we can avoid dangers such as computer games and plays, which have a negative influence on a child's psyche because they quite often contain elements of aggression.

On the base of the first question of the interview, new ones arise: Is the pre-school age the best to time make a child acquainted with the multimedia devices? Does the child's actual contact with the electronic equipment results from the thought-over and consequent path of their development? Is it the effect of natural contact with such devices being in the child's surrounding? The education has faced the massive computerization of the world. Computers have entered our everyday life and it is hard to imagine not being able to use them. There is no doubt that the computer is a modern educational tool for a wide spectrum of uses. It is worth underlining that the teacher's job, in this context, is to give proper patterns of how to use technical achievements. The issues were widely approached by Jan Paul II in his preaching. As early as in 1990, he pointed at the computer as an indispensable tool of evangelization, education and catechizing in the present times. In His message "The Mission of the Church in the era of computers", the Pope directly recommended the Church representatives to "use modern capabilities, which opened progress in the area of computer and satellite technique". He saw huge possibilities for teaching and catechizing of the believers, but also called for big responsibility and common sense while using them.

Using an interactive board in pre-school units in the 26th Maria Konopnicka Primary School in Dąbrowa Górnicza – presentation of examples

During the interview, the authors of the article also asked about ways of using an interactive board while working with children. One of the teachers very willingly shared her experiences. Apart from classes of pre-school education in a pedagogic group, she also runs English classes in all pre-school units. She documented her classes by taking photos of children during their work with an interactive board.
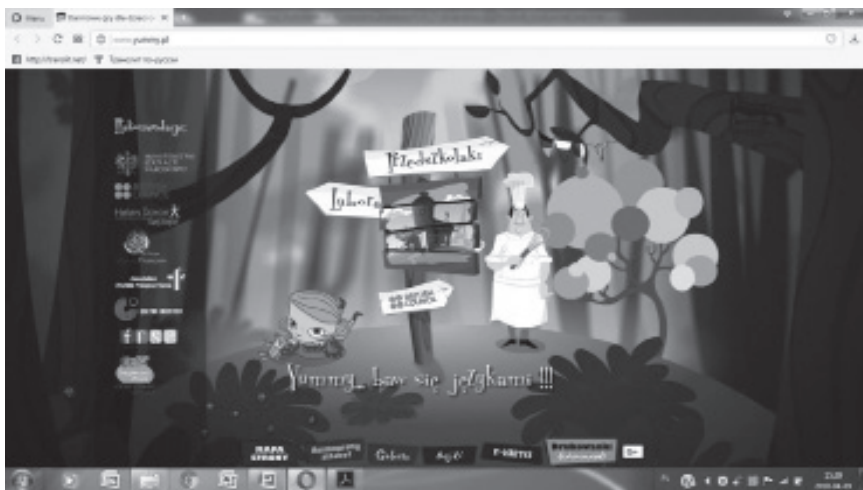

Figure 1.
I can paint on this board!
Source: Downloaded from: http//sp26dg.edupage.org/ [accessed: 28.02.2018].

The teacher, wanting to check if younger pre-school children will be interested in working with an interactive board, initially used the equipment which was in school classrooms of integrated education. The progress, made by children thanks to the use of modern technology, influenced a decision about equipping the pre-school unit with such devices. In 2018 an interactive board was installed together with programs enabling the children to do exercises from the range of small and big motor activities, mathematical tasks, classifying various objects, recognizing sounds made by animals, recognizing shadows and dress up a child appropriately to a season. In the teacher's opinion, those apparently so simple tasks, gave the children a lot of excitement.

Each child wanted to come up to the board and show that they could also work with it, even those among the shiest ones. When the pre-school children had learnt the basics of the interactive board use, the teacher started using the yummy.pl portal during her English classes. During the interview she pointed out the website:

Figure 2.
The view of the educational portal website.
Source: Downloaded from: http//www.yummy.pl [accessed: 29.04.2018].

As it can be noticed in the above picture, there is a special overlap for pre-school learners. The teacher reports:

> The proper overlap with games can be chosen e.g. fruit memory, the children repeat and consolidate names of fruit in English (they practice mainly memory), they set up a proper number of figures (then they count in English, practice adding and deducting), they make sandwiches (they learn the names of ingredients of sandwiches, but also setting them in the right order – according to the given order), they learn the names of family members. (www.sp26dg.edupage.org)

The teacher points out that the exercises concerning the family cause children the most problems, because the photographed family consists of many members, and for each of member there are other people who are their son, dad, daughter, mum etc.
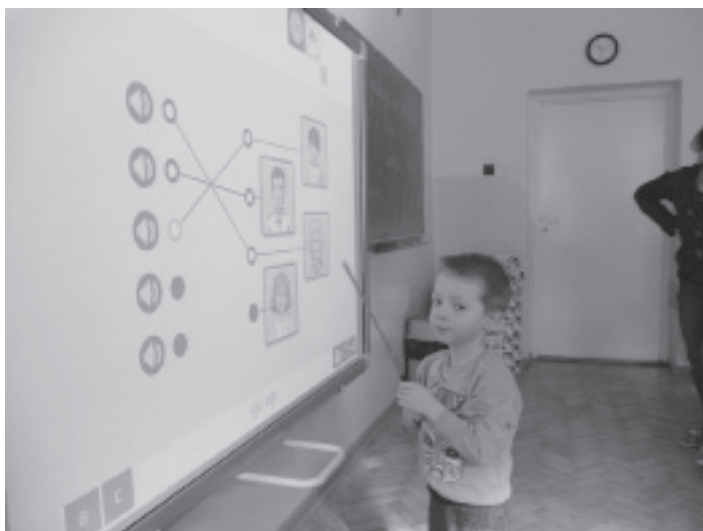
Figure 3.
Who is who in this family?
Source: Downloaded from: http//sp26dg.edupage.org/ [accessed: 28.02.2018].

In the interview, the teacher mentions that in some exercises it is necessary to have reflex, but not only that. The children also consolidate names of colours and shapes in English, count in English and learn to name emotions. In the game of shadow theatre, children have to give a proper name of the presented animal.

A negative side of working with the board is the fact that only one child can use it at the same time. A positive side of this situation is the fact that other children learn how to be patient. A possibility of working with the board can sometimes be a form of an award.

Another teacher, working in the pre-school unit shared her experiences connected with working with the interactive board in the 26th Primary School in Dąbrowa Górnicza: "Classes with the board usually begin with something connected with topics of the week. Around the 11th November, I discussed with the children the national symbols and they listened to the national anthem. In December we had St. Clause Day, and then Christmas traditions in different countries and after they listened to Christmas carols in various languages". At the same time, the teacher underlines that the classes are not limited only to working with the board, but they are also full of breaks for

kinesthetic activities. All songs sung by the children are illustrated with moves. The interviewed teacher says:

> That's the game and we use here YouTube; we use songs and ready-made choreographies to well-known songs. The children look at the board and they repeat moves appearing in a song, each of them being able to see the picture because of the size of the board. Moreover, a lot of available recordings are accompanied by lyrics appearing on the board, which is helpful both for the teachers and the children, not only those who can read. Without any doubt, it is an element of global reading. A child, thanks to the possibility of watching and listening, gets activated kinesthetically, which is helpful while acquiring knowledge. We dance, play and get back to games, then we again dance, sing and our time is over. (www.sp26dg.edupage.org)

She also adds: "I know it is nothing creative or ambitious but my children are happy when we go to the classroom with the board. There are various attractive portals such as squla.pl, but my children need simple, short sentences and a lot of moving with a picture".

Figure 4.
So let's move a little bit now…
Source: Downloaded from: http//sp26dg.edupage.org/ [accessed: 28.02.2018].

The educational portals for pre-schools

The Yummy educational-language portal (http://www.yummy.pl/), which is used by the English teacher in the described pre-school unit, offers the youngsters an interesting method of learning by playing. Games for children are divided into particular topical categories e.g. mathematical games, puzzles, dressing up printed figures or colouring. Colouring and dressing up are ideal ways to create in children a taste of esthetic, spatial thinking, inventiveness and kinesthetic coordination. They can be a great preparation for further foreign language learning.

Thanks to the speech therapy part of the portal for children, the youngster can be taught proper speaking. The proposed exercises are a source of inspiration for speech therapists and teachers, but they are also a great help for parents to practice proper pronunciation with their children.

It is possible to find free online language games for children at the early pre-school age. Their advantage is the participation of native language speaking children in making recordings (children native speakers). In this way pre-school children get another motivation learning from their peers. Games are divided into topical categories which have been mentioned before. All of them shape comprehensive skills of pre-school children, and at the same time they are unforgettable, virtual journey into the child's world of imagination (http://www.yummy.pl/).

The previously mentioned Squla (https://www.squla.pl/) is also a modern educational platform, which helps every child to develop their talents and interests. It is intended for both school students and for pre-school children.

Figure 5.
The view of a page of the internet educational portal.
Source: Downloaded from: https//www.squla.pl [accessed: 29.04.2018].

Squla makes interactive games, quizzes and educational films available in order to interest children to study systematically and on their own. It covers the program of pre-school education and, what is important, is compliant with the core curriculum of the pre-school education by The Ministry of National Education for the school year of 2017/2018. Squla is adjusted to a lot of devices: a computer, a tablet or a smartphone. It makes it possible for parents to follow their children's progress in the parent's panel (https://squla.pl).

All the teachers taking part in the research claim that thanks to educational programs, children acquire knowledge and shape their skills in a more interesting way what is giving them a lot of satisfaction. However, the condition is to adjust the material to children's level and abilities, because only then they have an influence on their comprehensive development. As another teacher stresses out: "They should make it easier to acquire knowledge and shape such skills as reflex, patience, stamina, logical thinking, visual-motor coordination, practice perceptivity, manual skills, concentration, activate and inspire imagination".

Conclusion

The multimedia supports activities undertaken by a teacher and children, it makes classes more attractive, it shapes and develops self-dependence. Computer multimedia programs take into account the child's cognitive possibilities and learning fun. Thanks to it, a child has a possibility to do numerous varied and interactive exercises of various level of difficulty. In Skibska's opinion (2014) "Educational usefulness and attractiveness of IT didactical means results from special features of a computer, which allows to, in a great extent, simultaneously influence all senses of an individual" (p. 385). A well-made multimedia program is the one which uses high-quality graphics, very often enriched with special effects and animation and sound effects.

The offer of the educational software for children at the pre-school age which is available on the Polish market is quite wide and is constantly growing. Every teacher planning to use a computer during classes should though realize that the full success will be ensured only by a computer program adjusted to aims and contents of education carried out during the classes. The contemporary pre-school children are "Digital natives" – a generation brought up from their very first months of life in a digital environment. This is the generation which rapidly learns how to use multimedia devices as a tool to search for, select and gather information (Bougsiaa & Kopcewicz, 2016).

Summing up, it is worth stressing out that in the 21ˢᵗ century, not only have changed the methods used in working with children but so have didactic means. In common with traditional toys such as building blocks or dolls, without which we cannot imagine a pre-school, more and more often the multimedia, which is the natural environment of the generation of children, is used in the pedagogic-didactic process.

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Multimedia in pre-school education

Summary: The authors of the article undertake an academic reflection on using the multimedia in pre-school education. On the bases of the example of the 26th Primary School with Pre-school Units in Dąbrowa Górnicza, the advantages of using the interactive board during classes have been presented. The results of the Authors' own research carried out among pre-school teachers, have been presented. The inevitability of using the multimedia in the pedagogic-didactic process has been pointed out.

Keywords: multimedia, interactive board, children, educational aids, programs, pre-school

Multimedia w edukacji przedszkolnej

Streszczenie: Autorzy artykułu podejmują refleksję naukową nad wykorzystaniem multimediów w edukacji przedszkolnej. Na podstawie przykładu Szkoły Podstawowej z Jednostkami Przedszkolnymi nr 26 w Dąbrowie Górniczej przedstawiają zalety korzystania z tablicy interaktywnej podczas zajęć. Relacjonują wyniki badań własnych, przeprowadzonych wśród nauczycieli przedszkolnych. Wskazują także na nieuchronność korzystania z multimediów w procesie pedagogiczno-dydaktycznym.

Słowa kluczowe: multimedia, tablica interaktywna, dzieci, pomoce edukacyjne, przedszkole