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## **Usage of Information and Communication Technologies by Children at Early School Age**

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### **Abstract**

The development of information and communication technologies has caused changes in many fields of human activity and led to numerous social changes. They also influence the youngest generation. With the intention to assess how wide the range of usage of modern technologies by early school age children is, the article below presents the results of surveys dedicated to the above mentioned issue.

**Keywords:** information and communication technologies, mobile devices, multimedia equipment, children at early kindergarten age, parents, teachers

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### **Introduction**

The term *Information and communication technologies* (ICT) signifies ‘the family of technologies processing, gathering and transmitting information in an electronic format’ (*Spoleczeństwo informacyjne w Polsce...*, 2012, p. 13). They comprise particularly computer technologies (hardware and software) as well as communication technologies (Matusiak, 2008, p. 339).

ICT appears in various fields of human activity – ranging from politics to education. Because of this, the ever increasing role of multimedia created the need of establishing a special science dealing with diverse pedagogical aspects of media – “pedagogy of media” or “media pedagogy”, whose fundamental aim is to prevent the development of media illiteracy phenomenon among people of every age (Strykowski, 2002, p. 13–24). Guided by the words of Strykowski (1997, p. 17), who claims that media pedagogy faces social challenges, but primarily faces the need of the study on the impact of the media on life, in the further part of the article there will be presented the results of the study showing the range of use of and the above-mentioned impact of modern technologies on the youngest generation users.

## **Characteristics of the conducted study**

The study undertaken aimed at determining the range of the usage of modern technologies by the children at kindergarten age and their teachers, including the frequency and the preferences related to the use of modern mobile devices and other multimedia equipment.

Empiric material was gathered using the method of diagnostic survey with the use of questionnaire and interview\*. Seventy two children at kindergarten age were surveyed by means of the interview questionnaire, including 36 children at the age of 4 and 5 in Municipal Kindergarten nr 7 in Ruda Slaska and 36 children at the age of 3, 4 and 5 attending Friends of Disney Fairytales Public Kindergarten nr 10 in Czeladz. The second sample was a group of 72 parents of the above mentioned children, who were surveyed with the use of a questionnaire survey form. Furthermore, a focused interview was conducted with four teachers belonging to the teaching staff of the two above mentioned kindergartens.

The results gathered depict a characteristic picture, contents of which will be thoroughly analyzed in the study below.

## **The results of the research conducted**

When answering the first question directed to both the children at Municipal Kindergarten nr 7 in Ruda Slaska and their parents, the respondents enumerated the multimedia devices they have in their households. The analysis of the gathered research material informs us that the most popular device is a smart phone and a laptop, and the least popular is Xbox and PlayStation. What is interesting, children's and parents' responses are not convergent. And so, 83.3% of the parents surveyed declare owning a laptop in their households and this is the answer most frequently selected by this group of respondents. For comparison, 58.3% of children claim that a laptop is a part of their household equipment, whereas 13.8% have no idea whatsoever whether such a device is present in their homes. Among children respondents, 100% answers indicate the smartphone possession compared to 69.3% of parents' responses. Such a divergence in responses given may result from children being unaware of the proper names of the household devices, lack of education in that respect or just parents not allowing their children to use those devices at such a young age.

In the next part of the questionnaire, parents were asked whether they allow their child to use this kind of devices. What is interesting, 33 people (91.6%) admit to letting their children use mobile devices, and only 3 respondents (8.4%) do not allow for this kind of entertainment or study with the use of multimedia. Among respondents who give a positive response, 15 people admit that their

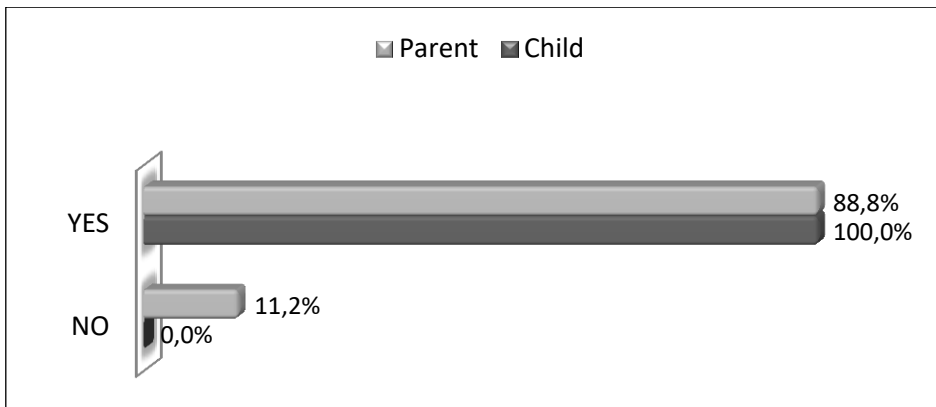
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\* The study was conducted by Magdalena Skut and Magdalena Majcher within the diploma seminar under the supervision of the author of this article; permission to use these results for scientific purposes granted.

child has been introduced to the world of modern technologies at the age of four, and another 10 respondents indicated the age of five. Seven parents allowed their children to use multimedia devices as early as at the age of three, and one respondent confessed that their child had this opportunity at the age of 2.5 years.

This shows that the respondents comply with the recommendation of American Pediatrics Academy according to which a child below the age of two should have no contact with mobile devices (AAP, 2011, p. 1040–1045). However, it is worth narrowing this question down in order to specify a kind of activity undertaken with the use of the mentioned devices. Therefore, both children and their parents provided their responses describing their contact with multimedia games, which is pictured by Figure 1 below.

**Figure 1. Does a child play (or has a child ever played) games with the use of electronic devices?**



Source: author's own research.

On the basis of the analysis of the respondents' answers it was established that the children's opinions do not completely converge with parents' ones. 100% children answer that they have come across multimedia games in their lives. However, four parents, which constitutes 11.2% respondents gave a negative response to this question saying that according to them, children have never played any multimedia games. This allows for conclusion that in the group surveyed, there were 4 children who had some contact with multimedia games beyond parents' supervision.

During the survey performed in Public Kindergarten nr 10 in Czeladz, the questionnaire went a step further because it asked about the multimedia equipment situated in a child's room. In this case, also a laptop was the most popular answer – 41.7% of parents' responses and 52.8% of children's responses. The biggest percentage of responses pointed at TV set – 94.4% of children and

91.7% of parents provided such answers. The worrying fact is that, according to parents, nearly 20% of kindergarten children have Xbox and PlayStation devices in their rooms.

The research demonstrated that 72.3% of children, according to parents, watch TV every day. Frequency of TV watching increases with age – 50% of five-year-olds watch television for 1–2 hours a day, 33.3% of kindergarten children use the Internet daily. Collected data confirm that children use information and communication technologies at home every day. Only 6% of children do not watch TV and only 19% do not use the internet.

The survey also focuses on questions about the purposes of using ICT. Programmes watched on TV are mostly cartoons and animation movies. Parents responses also referred to educational programmes – 55%. Nearly 40% of respondents admitted to choosing the entertainment programmes and quiz shows for their offspring. It is confirmed by the teachers who notice that children watch cartoons very often. The worrying aspect of this is that these animations often contain a lot of violence. Children themselves admit that they most enjoy watching quiz shows and entertainment programmes – 47.2% and animated fables – 30.6%.

Children's favourite activity to be performed on a laptop or tablet are games – nearly 56% of responses. The study also suggests that kindergarten children most eagerly use ITC for playtime, entertainment and educational purposes as well as for communication. However, parents neglect the parental lock of inappropriate content. Nearly 80% of parents surveyed do not have this particular feature activated.

Since the range of application of ICT is wide, it seemed justified to ask the teachers about their preferences in using multimedia devices in their everyday work with children. The surveyed teachers unanimously admitted that they use information and communication technologies only occasionally. They remark that nowadays the above mentioned technologies are very important but they also know that children use them very often when at home so in order to promote common sense attitude, teachers choose other forms of activities in the classroom.

The idea of kindergarten's proper activity is the focus on individual, creative development of a child, taking into consideration his activity within a physical, cognitive, emotional and social sphere. All curricula realized in a kindergarten (teacher's own or other authors') are primarily expected to satisfy the natural need of expression among children, including: broadening the range of emotions and experiences, acquiring the skills to look after one's health and safety, developing various forms of physical activity and many others. Teachers claim that information and communication technologies are not necessary in those activities and sometimes are even disturbing. Therefore, instead of playing an animat-

ed fable, teachers prefer to read those fables. Educational institutions participate in the national campaign “Poland reads to children” in which parents, councilmen, sportsmen, students and pupils are invited to join the action. In this way, children shape their imagination and “do not get everything offered on a platter”.

## **Conclusion**

Sensible use of modern information and communication technologies may support children’s development and teach them to move around the technological world. However, excessive use of this this type of devises may have a negative effect. Therefore, before we decide to introduce a child into the world of modern technologies, it is worth remembering that no computer will fulfil social and educational roles.

The research implies that children at the age of 3–5 are already in the possession of their own communication devices. There is TV permanently fixed in children bedrooms, and 72.3% of children watch it daily. More than half of the surveyed children have their own laptop or tablet which are mostly used for playing games (nearly 56% responses).

Therefore, if we cannot escape the world of technological novelties and advanced mobile communication technologies, it is worth emphasizing the safe and sensible use of electronic gadgets. The necessity of media education among the youngest children is discussed by Izdebska, who sees the main goal of this education in creation of favourable conditions and educational situations. Thanks to them a child, supported by family and kindergarten environment, learns to use modern technologies by “assimilating important and necessary skills of selective choice, active and critical content reception, understanding and interpretation of the communicates, proper understanding of violent scenes and shaping the awareness of the dangers that the Internet brings (Izdebska, 2009, p. 9).

On the other hand, potential benefits related to information technologies must not be overlooked. Thanks to television and computer a child has an opportunity to participate in discovering the world through the modern media. It is a computer, together with information and communication technologies, that constitutes a chance for education to part with narrowly perceived encyclopedism and to move towards the creation of cognitive structures on the basis of fundamental information and developing the skills of long-lasting education and tackling the problems that appear alongside new informational resources (Gurbiel, Hardt-Olejniczak, Kołczyk, Krupicka, Sysło, 2017).

In order to prevent negative aspects resulting from the usage of mobile devises by the youngest ones, it is worth helping children notice the educational value present in the new media and trying to take advantage of it. Nowadays, it is extremely easy to find educational computer games or applications which allow children to realize this task successfully. Letting the children at the age of

3-5 use the information and communication technologies should be followed by the implementation of certain rules. First of all, children should have access to safe and useful content. Parents should accompany their children in using the mobile devices, and daily media usage time should be sensible and proportionate to the child's attention span.

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