

<https://doi.org/10.17048/AM.2023.185>

<https://videotorium.hu/hu/recordings/51449>

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Comparative metaphor research on the concepts of digital teaching and digital generation regarding the views of primary school teachers

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Abstract: The purpose of the study is to highlight how teachers think about the students they teach while taking into consideration that the students belong to the digital generation. Furthermore, the aim of the research is to explore primary school teachers' perceptions of the digital education they experienced during the COVID-19 pandemic. To reveal the subconscious views towards digital education and generation, qualitative spontaneous metaphor analysis is used, and the sample consists of 50 primary school teachers. According to the results, low primary school teachers' opinions show that digital education is a good opportunity (a), but they feel (b) ambivalence, and they also face a number of (c) difficulties. Digital generation represents the characteristics of a new generation, for whom the professional use of tools is essential, and therefore, educational pedagogy needs to change. The results of this small-scale study provide informative data for both primary school teachers, the teaching-learning process in educational circumstances, and even teacher training at universities.

Keywords: metaphor research, digital teaching, digital generation, primary school teacher

1. Introduction

In 2020/21 more than 90% of the world's students were forced to continue their studies from home while schools closed down to reduce the spread of COVID-19 (Unicef, 2019). The policy of education have been actively engaged in supporting remote teaching and learning circumstances and methodology to confirm the educational processes in the new situation. For each country, the OECD has produced a so-called digital wheel, which represents the country's digital readiness and current online risk situation.

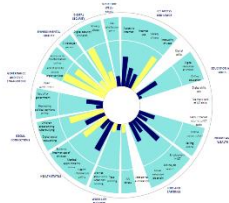


Figure 1 Digital well-being in Hungary (OECD, 2019, 148)

„The wheel depicts Hungary's relative performance in terms of key opportunities and risks in the context of the digital transformation. Bars indicate worse outcomes. If data is missing for any given indicator, the relevant segment of the circle is shaded in white” (OECD, 2019, 148). Hungary is highly exposed to the risks of the digital transformation and „...has a very high level of inequality of Internet uses” (OECD, 2019, 148). In Table 1 the most threats and opportunities of Hungary can be compared as factors.

table 1 Threats and opportunities of digital well-being (by the author based on OECD, 2019)

Threats	Opportunities
internet security, low levels of security and safety of Internet and personal data protection	internet access
the extreme risk of Internet use	school equipment and facilities
high levels of Internet bullying and exposure to fake news	access to health data online
low levels of public skills for e-government	employment in ICT

OECD results suggest that digitalization in Hungary is primarily seen as a technical issue, and that the human factors and the emotional risks of internet use are underestimated.

2. Theoretical background

2.1 Research findings of digital education in Hungary

This chapter provides a short summary of the main findings of Hungarian empirical research regarding online educational processes and methodological success can be followed in this chapter.

Apart from the COVID-19 pandemic, the Digital Education Strategy (DOS, 2016) was to prepare the field of education and training to serve the needs of the digital society. In Hungary remote/online learning and teaching from home were not impossible, but it was a shocking period in March 2019. The aspects of online teaching and learning related to all segments of education from early childhood education to higher education (Bakonyi, 2019; Barankai-Erős, 2020; Bíró, 2020; Bakonyi, Serfőző, Golyán, F. Lassú, Svraka, & Aggné Pirka, 2020). Results show that the structural design and effectiveness of online education showed a huge variety (Józsa & Pastendorf, 2021; Kisné et al., 2021; Malatyinszky, 2020; N. Kollár, 2021).

Most of the researches conducted questionnaire survey with the aim of exposing the support and experiences of teachers during remote teaching (Kisné Bernhardt, Furcsa, Sinka & Szaszko, 2021; Bernhardt & Szaszko, 2021; N. Kollár, 2021). Studies focusing on the characteristics of student-teacher relationships and the different ways of making contacts either online or offline highlighted that discrepancies emerged between teachers and their digital competencies (N. Kollár, 2021). According to the results of Kisné et al. (2021) it could be proved that Facebook groups (59%) and Messenger (53%) were the most popular online platform to have contacts with parents, but the usage of Kréta was underrepresented (22%). According to the results of ELTE 'TÁVOK 2020' research project, teacher training either offline or online is firstly communication among people, and the quality of the success of the training rarely depends on technical skills, exciting visual solutions and creative e-learning interfaces (Serfőző et al, 2020).

Methodological awareness could be mapped in motivation, knowledge transfer, task solving, practice, feedback and evaluation in the sample of 1-6 grade low primary school teachers (Szaszko, 2016; Bernhardt & Szaszko, 2022). Not only teachers, but students' opinions and experiences were revealed regarding online education. There are some thought-provoking results according to the effect of online education in Hungary and worldwide. Based on the data of the students' data assessed by the eDia software of the University of Szeged, the three-month school closure in 2020 manifested in two months of knowledge loss. The loss is particularly high in the lower grades in the areas of reading comprehension, mathematics and science (Hermann-Molnár 2022). The gap was particularly large in primary schools with a high proportion of disadvantaged students, where they were could not reach and provide pupils with conditions for distance education. School closures in Hungary could have induced a drop in PISA test scores between 63 and 105 and increased the percentage of underachievers in reading comprehension by 10-17% (Lannert, 2022).

Many journals and thematically structured periodicals dedicated full issues to the pedagogical and methodological aspects of COVID-19's online education. Scientific Journal of Childhood Education (2021/2) explores the pandemic situation that is changing education forever, with a scientific approach and a colorful and varied range of articles, constantly looking for solutions. One of the research groups of Selye János University published a number of studies dealing with professional issues of online education from both theoretical and practical perspectives, as well as situation reports on online education in Transylvania, Transcarpathia, Hungary and Slovakia.

2.2 The features of the digital generation

Age group can usually be reflected as a generation if it is characterized by a common immanent property, generational consciousness and community status and three conditions are required: a common experience; actual peer-to-peer orientation and common situational interpretation, attitudes, forms of action (Mannheim 1969 in: Nagy-Kölcsey, 2017). In this study and regarding my research I use the concept of digital generation in the means of the definition stated by Lengsfeld (2019, 154).

'Digital generation' refers to all people in the age group whose birth is in the period of an already advanced stage of the proliferation of digital technologies and who have experienced the "digital world" as the formative environment since their childhood and youth." Many phrases can be claimed synonyms or they can refer to variable aspects as (see in Hockly, 2011): cybercitizens, netizens, digital natives, homo digitalis, digital youth, netgeneration (Oblinger & Oblinger, 2005), Google generation, Alpha generation (Nagy-Kölcsey, 2017). These conceptual variabilities and differences can not be analyzed in this study, while I use „digital generation” for those students who attend primary or secondary school education nowadays (see above Lengsfeld's definition). Szabó (2015) used the "rocket" metaphor regarding digital children who expect an immediate response, decide easily, develop rapidly, have "multi-channel" attention and who are utilitarian, fast and not afraid to change. In addition to the confident use of tools, a positive attitude is essential for digital literacy, as teachers need to be able to see how the use of ICT tools transforms the teaching process and how they can be used most effectively. (Furcsa, 2019).

Based on these properties, it is worth considering how well the students of the rocket type can learn effectively. As an active user of the information - communication technology (ICT) tools, multimedia and social networks could be used in the process of learning. Students are open to cooperating, but there is a strong demand for self-study as well. In both cases it is outstanding that they have a strong need for feedback regarding their work. However, ICT tools often cause situational use of language and problems in time management. In the light of the mentioned features, learning and teaching should be adapted to students' personalities influenced by technological and social change. In my empirical research I would like to give feedback on the theoretical aspects with the help of my research findings.

3. Empirical research regarding low-primary teachers' views on digital generation and digital education

3.1 Purpose and process of the research

The purpose and rationale of the research were to highlight how teachers think about their students and to explore lower-primary school teachers' perceptions of digital generation and online education. The research niche was to focus on lower primary-school teachers' attitudes via the method of metaphor analysis. My research questions were the following ones: How do teachers perceive digital generation?, What are teachers' views and experiences on digital education?

The period and time of the research took place in December 2015 and in May 2020, so it is important to note that the first part of the research was conducted before the COVID-19 pandemic. The sample consisted of 50 in 2015 and 71 lower primary school teachers in 2020. I was interested in comparing these two concepts regarding the teachers' views since it is important that digital education could fit to the interests and needs of the digital generation – in the first place - in the teachers' minds.

In order to gain information about teachers' notions and views qualitative metaphor analysis was used. The data of "*Digital education is like ... because ...*" unfinished sentences were analyzed qualitatively by coding, categorizing and finalizing the metaphors. Metaphor research is an increasingly adequate pedagogical research method in order to gain insight into teachers' first thoughts, get to know associations, and visualize their emotions regarding the concept and the related pedagogical practice. According to previous metaphor researches the hidden views of teachers can be fully explored. More detailed description of metaphor analysis and research findings regarding primary school teachers' views can be found in the author's previous studies (Trentinné, 2009; Magyarné Fazekas, 2009; Kisé Bernhardt, Molnár & Furcsa, 2016; Kisé Bernhardt, 2016; Kisé Bernhardt & Kriegl, 2017; Furcsa & Bernhardt, 2020; Bernhardt & Furcsa, 2022; Bernhardt, Szaszko & Furcsa, 2022).

3.2 Results of the research

In the study the main features and of the two keyconcepts (digital education vs. digital generation) and comparative analysis of the different notions and views are explored since more detailed analyses have already been published previously (Kisné Bernhardt, 2016).

DIGITAL GENERATION was used to refer to five groups of full-time and part-time student teachers (Table 2). The conceptual categories of ROBOT, BORN EXPERT, FAMILY, INNOVATION and IMPULSE emerged as source concepts of the digital generation. The category of Robot had the highest number of metaphors (N=20), typically evoking the image of an emotionless programmed machine performing specific functions, while the source concept of BORN EXPERT (N=13) may show some similarities as robots also make perfect solutions and decisions in some cases. The identification of the subconceptual category of FAMILY (N=8) demonstrated much more human and emotional features, implying a sense of community rather than the loneliness or perfection. Only for full-time students created the conceptual domain of INNOVATION (N=4) consisting of potential development. According to the conceptual categories of IMPULSE (N=5) part-time students (who are more dispersed in terms of age) denoted the members of the digital generation a group that represents bustle and speed, someone who needs continuous movement and activity,

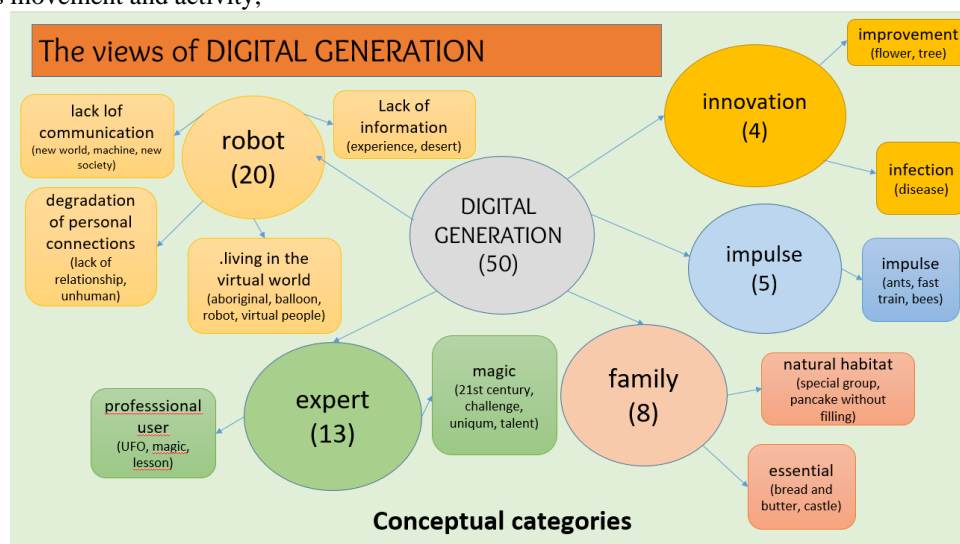


Figure 2 The views of student teachers regarding DIGITAL GENERATION

According to the other keyconcept (DIGITAL EDUCATION) based on 49 spontaneous metaphors can be organized around three main source concepts: OPPORTUNITY, AMBIVALENCE and DIFFICULTY, which depict a diverse and revealing picture that parallels the results of other experiences and research on the advantages vs. disadvantages, usefulness vs. ineffectiveness of online education.

The OPPORTUNITY category primarily summarises the positive experiences gained during online education and the aspects of different features of pedagogical processes in digital space, symbolized by the subcategories of *enjoyment*, *challenge*, *flexibility*, *cooperation* and *individual work*. In the enjoyment subdomain, some source concepts mainly refer to the strength of professional competence, such as the subcategories of *enjoyment* and *challenge*. The source concept of *flexibility* also exemplifies the eternal parallel between learning and working, while the subcategory of *cooperation* draws attention to the possibility of interaction and also to the role of space and time.

AMBIVALENCE conceptual category includes the attitude of teachers that depicts doubts, duplicity, possible attempts experienced during online education, but also deviation from the real essence of the situation. Twelve spontaneous metaphors form the subconceptual categories, represented by the source concepts of *non-real*, *bilaterality*, *inanimate surface*, *dependence* and *individual work*.

The DIFFICULTY category was formed with 38% of the given answers. The attitudes can be attributed to the subcategories of *necessity*, *lack of support*, *uncertainty* and *ineffectiveness*. It also includes metaphors that emphasize the lack of *personal contact* (although this idea also appeared as part of an earlier subcategory).

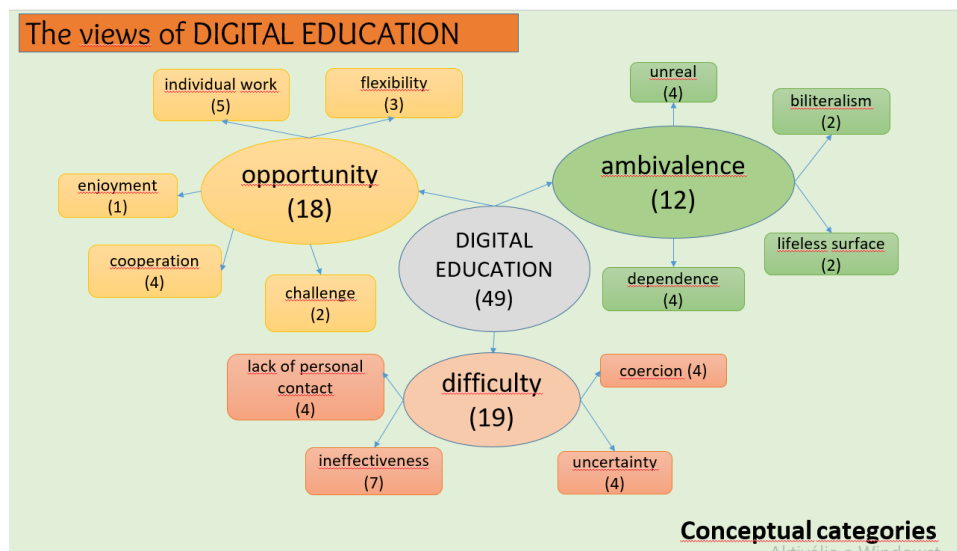


Figure 3 The views of student teachers regarding DIGITAL EDUCATION

3.3 Comparison of the structure of the concepts

The digital generation is living in a virtual world that is fast and up-to-date, responsive and versatile. They adapt easily to new knowledge. The form of their communication is special, the personal contacts are poorer and the generation is characterized by a crisis of values and alienation. Their surrounding reality is definable, because there is large amount of stimulus and constant stimulation effects. They live with the help of tools, so the everyday life is rapidly changeable and renewable. Their social competence is less significant. Information-communication techniques and digital tools usage is fundamental for them. They also require pedagogical changes in schools such as like new methods and different collaborations.

Digital education metaphor analysis conveys that digital education during the pandemic period obtained innovative pedagogical processes, but teachers needed methodological and digital literacy skills in order to be successful. Feelings and attitudes toward digital education can be claimed as ambivalent and indecisive. Furthermore teachers acquired cognitive and affective improvement, while they confronted new aspects during Covid-19 pandemic.

4. Conclusion

Taking the results of the metaphor research into consideration, it can be claimed that the notions and attitudes of primary school teachers towards digital education are variable. The views on DIGITAL EDUCATION and DIGITAL GENERATION present that there is a huge gap between how teachers feel about the online teaching-learning process and what their students need a 'digital generation' in the classrooms. The emotional features of teachers regard to problems and difficulties. Also, they feel the power of new methodology in education with the help of ICT tools and internet access. They understand the differences between the classical and modern options in teaching based on the special features of students.

As it is obvious in the case of metaphor research, one of the great values of this qualitative study is that the above interpretations have an intuitive, personal character, not forgetting that the subjectivity of the analyst can also be discovered in the process (Vámos, 2003). All the results can help to further develop recommendations for the development of methodological and social competencies specifically for teachers in grades 1-4 of primary school.

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