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Analysis of children's conceptions of the terms computer, internet and information

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Abstract

The article analyzes children's ideas about concepts based on qualitative research (Lipnická & Vrábľová, 2024). The aim was to identify phenomena related to the concepts of computer, internet, and information in children based on thematic analysis. In individual interviews, ten children aged five to six answered descriptive questions such as "What is it?", application questions such as "What is it used for?", evaluative questions such as "What would it be if it weren't there?", and questions about the source of knowledge such as "How do you know that?". The questions were clarified and developed in the interviews to encourage the children to talk as much as possible (Babiaková, 2019). Analysis of the interview transcripts made it possible to formulate topics for each child individually and then for the whole group. Based on the gradual discovery of relationships, groups of broader and narrower topics were created. The children's statements showed that they perceive computers mainly as a work tool, a source of entertainment, and a means of communication. This understanding is influenced by their observations of adults and their own experiences. Most children perceived computers as useful, even if they did not know their functions. The children spoke similarly about the concept of the internet. They drew on their experiences from their family environment, and many of them did not understand what it was. The children understood the concept of information in different ways, mostly intuitively. Some associated it with learning, rescue, verbal exchange, or digital communication. Some were unable to explain the concept. Children understood concepts mainly on the basis of sensory experiences, i.e., what they perceive and experience is true for them (Bloom, 2015). Their expressions were concise, mostly using simple sentences. Children also talked about specific concepts when they confidently named some characteristics of meaning (Lipnická, 2024). The findings may be useful in adapting the content of preschool education to the possibilities of conceptual learning and children's experiences. We suggest that learning to understand the meaning of digital literacy concepts should become part of innovations in language education.

Keywords: *children's preconceptions, thematic analysis, computer, internet, information*

1. Introduction

1.1 The development of conceptual thinking in children up to six years of age

A concept, understood as a word or symbol, is the result of complex logical and cognitive operations. However, preschool children do not yet have the capacity for abstract thinking that would allow them to fully apply these operations. They are in the developmental stage of preconceptual thinking, which is characterized by the use of preconcepts—schematic, imprecise, and subjective ideas about reality. Their limited experience and knowledge restrict children's ability to understand the degree of generalization of the meaning of words and to establish criteria for generalization, which prevents them from understanding abstract concepts. Their cognitive processing of concepts is conditioned by concrete ideas, visual thinking, and immediate sensory experiences. According to Piaget and Inhelder (1997), children's ideas about reality that arise through autonomous thinking are referred to as spontaneous concepts. In contrast, concepts mediated by adults or formal learning represent scientific concepts, which, however, remain strongly tied to a specific context and situation in preschool age. Research by Lipnická and Vrábľová (2024) confirms the predominance of spontaneous ideas, through which children compensate for insufficient objective knowledge with subjective interpretations of meanings. Although these interpretations show certain signs of connection with reality, they are characterized by egocentrism and concreteness. Vygotsky (2017) pointed out that the development of conceptual thinking does not take place in isolation but is embedded in broader social and cultural interactions. The transition from concrete to abstract thinking is mediated by language, which serves not only to name things, but also as a tool for organizing

thinking, categorizing experiences, and forming cognitive structures. Through imagination, personal experiences are linked to culturally conditioned meanings of concepts, creating a basis for the systematic development of conceptual thinking. The process of naming and expressing one's own thoughts is an important step in cognitive differentiation and generalization. At the end of the preschool period, elements of a shift away from concrete thinking begin to appear, signaling the onset of abstract thinking (Vygotsky, 2017). The development of concepts is dialectical, resulting from the interaction between the ability to abstract and concretize experiences. Language as a tool of cognition allows us to create meaningful relationships between concepts and apply them in the process of thinking and communication. Bloom (2015) emphasizes that the way language is acquired has a fundamental influence on the development of understanding the meanings of words. Adults play a key role, as does the environment, which provides linguistic stimuli and models. Children acquire meanings in the context of specific activities and situations, with their natural curiosity and tendency to ask questions playing an important role in the dynamics of concept acquisition. According to Vygotsky (2017), a new concept or idea makes sense to a child if they can apply it functionally in their own thinking and communication. The importance of social context in the acquisition of linguistic concepts is also confirmed by research by Yıldırım (2020) and Vužňáková (2020), which shows that children interpret the meanings of words depending on cultural conditions and individual cognitive prerequisites. These differences lead to significant individual differences in the understanding and use of linguistic concepts. The process of developing conceptual understanding in early childhood is complex and dynamic, determined by the interaction of linguistic, cognitive, and social factors. It is not just a matter of accumulating vocabulary or improving language skills, but part of the overall development of the child, reflecting the quality and nature of their interactions with their environment. As Lipnická (2019) points out, this process involves the child's interaction and communication not only with social partners, but also with themselves and with various media in different life and educational situations and roles. Langmeier and Krejčířová (2006) point out that individual differences in children's language skills are often more pronounced than differences caused by chronological age. Already during the first year of life, children respond to sounds, especially the voices of their mother and caregivers, and begin to perceive the meaning of simple words used in everyday situations. The acquisition of word meaning takes place mainly in concrete, often repetitive contexts associated with the satisfaction of basic needs. Between the first and second years of life, children begin to produce their first words and simple two-word phrases. Passive vocabulary significantly exceeds active vocabulary at this stage—children understand more words than they are able to produce themselves. Understanding is no longer strictly tied to the situation, but the first forms of generalization of meanings gradually appear (Horňáková, Kapalková, Mikulajová, 2005). As Lipnická (2019) states, children at this stage are able to identify named objects and name them with imprecise articulation. In the third year of life, the ability to form simple sentences develops, which is related to the growing ability to understand the relationships between words and to distinguish between the nuances of meaning of concepts. Children begin to ask questions spontaneously, thereby actively expanding their vocabulary and deepening their understanding of linguistic meaning (Thorová, 2015). Between the ages of three and four, children better understand concrete, narrower concepts related to their everyday experiences. Understanding at this stage depends on the integration of verbal and nonverbal communication signals, which must be coordinated with each other in order for the interpretation of meaning to be correct (Bednářová, 2011; according to Hollá, 2015). At the age of four to five, children are able to work with broader concepts in objective contexts. Their understanding gradually shifts away from direct experiential contexts and includes more abstract meanings that are secondarily mediated through other people. During this period, they acquire more complex lexical units, including linguistic phenomena such as homonyms, synonyms, and antonyms (Reháková, 2015). Five- to six-year-old children are already able to distinguish between broader meanings of specific concepts and understand the narrower meanings of abstract concepts if they have sufficient experience with them. Their explanations of word meanings are often based on subjective experiences and personal experience, with less use of current interaction. They describe meanings through specific signs, properties, and external characteristics of people, objects, phenomena, and processes (Lipnická & Vrábľová, 2024).

1.2 Studies on children's understanding of the concepts of computers and the Internet

Educational attention has long focused on the development and study of children's digital competences. Less attention has been paid to how children understand the various elements and

functions of digital technologies, what experiences they have with them, how they evaluate them, and what resources they use in learning. In a constructivist pedagogical approach, this is important knowledge for teachers. There are studies focusing on this issue, which are listed below according to their focus. Mckenney & Voogt (2010) clarified the approach of 4-7-year-old children from different backgrounds (in the Netherlands) to technology, their perception and use in school and out-of-school settings. Rücker and Pinkwart (2016) presented concepts that children develop about computers based on an interdisciplinary review of the literature. Another published study (Mertala, 2019) provided an understanding of how children aged 5–8 (from Finland) perceive concepts from computer science. It was based on qualitative research using drawing and storytelling techniques. The children answered questions similar to those in our research (What do computers look like? How do computers work? What can you do with computers? What have you already done with computers? How do you know?). Eskelä-Haapanen & Kiili (2019) explained in their study how children aged 7–9 understand the concept of the internet in terms of the technical and social environment, the advantages and risks of the internet, and the trustworthiness of information on the internet. Another study focused on examining the perceptions of children aged 5–8 (in Nigeria) about computers, the internet, and code, including artificial intelligence (Oyedoyin, Sanusi & Ayanwale, 2024). These studies provided us with insight into the process and results of similarly focused research.

2. Methods

The aim of the survey was to identify phenomena related to the concepts of computers, the Internet, and information among five- and six-year-old children based on a thematic analysis. The concepts were selected from the state education program using the Delphi method. The study was conducted with ten children aged five to six who were at the end of their last year of preschool education (June 2024). The children were educated according to the school curriculum developed in accordance with the state education program for preschool education in kindergartens (2022). Participants were selected based on the informed consent of their legal guardians, who were informed about the objectives, course, and use of the research results. Data collection was carried out through individual semi-structured interviews conducted in the natural environment of the kindergarten in the presence of the class teacher (Benediková, 2025). This ensured the authenticity of the children's responses. The interviews were designed to encourage children to spontaneously express their experiences and ideas. The children answered four types of questions: descriptive ("What is it?"), application ("What is it used for?"), evaluative ("What would it be if it weren't?") and questions focused on the source of knowledge ("How do you know?"). In accordance with Babiaková's methodology (2019), the questions were adapted to the situation and designed to stimulate conversation among children. The interviews were audio recorded and subsequently transcribed. The complete anonymity of the participants was ensured. Data analysis was performed in the form of thematic analysis by two researchers. In the first phase, themes were identified within individual interviews, which were then grouped and analyzed at the level of the entire sample. The process culminated in the creation of clusters of superordinate (broader) and subordinate (narrower) themes, which emerged through the gradual discovery of meaningful relationships between individual statements. These were identified and interpreted as phenomena of children's conceptual understanding.

3. Results

Table 1. First level – description of the meanings of terms

Broader topics	Narrower topics	Children's statements	Phenomena of conceptual understanding in children
What is a computer?			
Used for a specific activity	Work	*"A computer is something with numbers on it that you work on."*	Children perceive computers as tools for performing specific tasks with practical and recreational uses. Practical functions include work, writing, sending emails, and learning, and they associate these activities with experiences from their family or
		"The computer is for work. If you have something else to do. If you want to fix something, if a colleague sends you something, you have to fix it."	
		"The computer is being worked on."	
	Playing	*"A computer. What do you do on it? ..... You can use it to work from home when you can't*	

		go to work, and you can play games and draw pictures on it."	observations of adults. They understand the communication role as a way of sending and receiving messages. Leisure use includes playing games, drawing, and entertainment, and they also perceive computers as a means of learning. Overall, they perceive them as multifunctional devices that combine work, educational, and entertainment functions, based on personal experience or observation.
		"Yes, I play on the computer at home too."	
	Sending emails	*"It's something we're working on." How do you work on it? "Sending emails and stuff." Do you know what an email is? "It's when someone sends you something."*	
	Writing	*"A computer? I have my own computer. You can work on it and download different games. You have your phone on it and you can do your homework and type it on the keyboard."*	
		"The computer is where you write. If you want to order something, for example, you write it down and then it comes to you in a package."	
	Learning	*"A computer is a monitor that you look at and learn from."*	
What is the Internet?			
It's on your mobile phone, computer, tablet	It's everywhere, depending on the signal	*"The Internet is in mobile phones. It's in tablets. It's everywhere."*	Children perceive the internet as a natural part of their lives, accessible on various devices (mobile phones, tablets, computers). They understand it mainly through the specific activities it offers them – watching videos and films, playing games, searching for information, communicating, and working. They associate the internet with the need to have a signal and see its importance primarily in entertainment and practical use.
		"The Internet? The Internet is also on your computer, but you download it. It's on mobile phones. It's on tablets. It's everywhere. The Internet only works where there is a signal."	
Allows you to track something	Movies, videos	*"That there are videos like that, even short and funny films."*	
	TV stations	*"We can watch whatever we want. On our phones, when we have internet, we can download Netflix, HBO, YouTube."*	
Used for a specific activity	Work	*"The work is done online."*	
	Searching for information	*"The Internet is when you look something up on Google."*	
	Telephoning	*"We can use the Internet to make phone calls, and it works on mobile phones and computers."*	
What is information?			
Used for a specific activity	Help yourself	*"When I was in the elevator, someone could have set the house on fire and the elevator could have gotten stuck, and then I would have pressed the bell. And someone would have saved me."*	Children understand the concept of "information" in a very concrete and personal way. They perceive it as something that someone tells them or passes on to them, or as an instruction or announcement relating to a specific situation. There is also an acknowledgment of uncertainty and incomplete understanding of the concept, suggesting that children's understanding of information is fragmented and strongly linked to specific experiences.
	Ordering	*"The information is that when you reorder something."*	
	Saying something	*"That someone will say something and I will know it."*	
		"Information? That's something he wants to tell you, and I don't know much about it."	
He has no idea	I don't know	6 children	

The common features of children's understanding of concepts (What is it?) such as computers, the Internet, and information are as follows. Children perceive them in concrete and practical terms, mainly through everyday activities such as work, communication, entertainment, and obtaining information. Their understanding is influenced by the experiences and observations of adults or their own practical experiences. Concepts are closely linked to communication and content acquisition, as they are means of receiving and transmitting information. They perceive computers and the internet as multifunctional tools for work, education, and leisure.

Table 2. Second level – application of concept meanings

Broader topics	Narrower topics	Children's statements	Phenomena of conceptual understanding in children
What do we use computers for?			
Used for a specific activity	Writing, counting	*"So that we can write."*	According to children, computers serve as multifunctional tools for work, communication, obtaining information, entertainment, and shopping. Children perceive computers as tools that are primarily used for writing and calculating, i.e., for various work tasks and learning. They also see them as a means of ordering and purchasing goods online, which allows them to obtain the things they want. Computers enable them to read and obtain information, for example about the weather, and are also associated with the everyday work of adults. In addition to work, children perceive computers as a source of entertainment and education through watching videos, cartoons, and tutorials on YouTube. At the same time, they understand that their use of computers may be restricted by their parents, and therefore their experience with computers is often based on observing adults or mediated access.
		"So we can write and do math there."	
		"I saw that we could write something there."	
	Ordering	*"So that we can write, buy, and order."*	
		"It can be used for something like children's shoes, which they order and then receive in a package. The children are very happy. *My dad works in a workshop, where he writes and orders everything he needs."*	
	Searching for information	*"You can still read something like that there, whether the weather will be bad or good."*	
	Work	*"For working, watching, and ordering. I know a little bit about computers, but my mom won't let me have one, so I won't have one. My sister has a tiny one that doesn't have a mouse."*	
		"For work." How can you work on it? "Emails that you have to finish for customers. You have to finish them for people who work with you and so on."	
		"For work." What else do we use it for? Do you do anything on the computer? "No. Only my mom." What does your mom do? "She loads packages onto trucks using the computer."	
	Telephoning	*"So we can call somewhere, or things like that."*	
Allows you to track something	YouTube	*"I watched videos on YouTube showing how they repair cars with engines. Engines."*	
	Fairy tales	*"I don't know anymore." What are you doing on the computer? "I don't have a computer." Are you watching something on the computer? "Fairy tales and stuff."*	
What is the internet for?			
Used for a specific activity	Work	*"..... my mom usually works on the internet."*	Children perceive the internet as a means of accessing entertainment (watching videos, short films, funny videos), communication (calling, sending messages), searching for information (e.g., "googling"), work, and downloading various applications (Netflix, HBO, YouTube). They emphasize its presence on various devices (mobile phones, tablets, computers) and associate it with the need for a signal connection. They perceive the internet as a basic tool that allows them to perform various practical and leisure activities.
	Telephoning Sending emails	*"So we can make calls and stuff."*	
		"So that we can send each other pictures when we're in Bystrica or Prague, or so that we can call someone to tell them that we can't visit them, and so on." I also have my own mobile phone, but I borrowed it from my mom. I'm only allowed to have a map or songs on it...	
	Searching for information	*"For some toys. When mommy doesn't know what her child wants, she googles it with her child and then they find it. For example, I wanted Ruženka, so we googled it."*	
Allows you to track something	Fairy tales	*"For entertainment and watching fairy tales."*	
		"That you can watch a fairy tale in the evening, on your tablet or phone. I can't do that on my phone. I don't know what YouTube is, or Tik Tok."	
		"I watch cartoons there."	

	YouTube	*"..... sometimes I look on the computer and YouTube to see what I would like to print out and stuff like that."*	
He has no idea	I don't know	2 children	
What is information useful for?			
Used for a specific activity	Learning	*"So that when someone tells you something and you don't know it, you don't have to learn it."*	Children understand information as a process of transmitting and receiving new messages that serve to acquire new knowledge and update existing knowledge. They perceive it as a way to learn about events, changes, or important information that may affect their daily lives. They also perceive information as a tool for communication between people, enabling them to share experiences, solve work or personal problems, and ensure that they are not uninformed or unprepared for new situations.
		"To say something new and let other people know about it."	
		"To find out if something happened or didn't happen."	
	Saying something	*"To tell you something about work. For example, my mom and dad can't say it in Czech or Slovak. They can only say it in English, so they'll say it in English.*	
	Writing SMS	*"Hey, an SMS is when you write something. You send it to someone else so they can read it, but then they write back to you."*	
	Ordering	*"That you can order something like that, that we can order something like that, for example, you order something."*	
		"So that we don't have anything old."	
He has no idea	I don't know	3 children	

The common characteristics of the terms computer, Internet, and information reflect their multifunctional and practical nature. They are perceived as tools for work, education, and leisure activities. All three concepts are related to communication and content sharing, enabling the sending, receiving, and exchange of messages, data, and experiences between people. The Internet and information also serve as means of acquiring and updating knowledge, with the computer being a key tool for accessing these resources. Children perceive computers, the Internet, and information as an integral part of everyday life, and their use is conditioned by the availability of devices and technical connectivity. In addition to their practical functions, the Internet and computers are also perceived as sources of entertainment and education, with information forming the basis of these activities. The mediation of adult experience and observation also play an important role in understanding these concepts.

Table 3. Third level – assessment of the meanings of concepts

Broader topics	**Narrower topics**	**Children's statements**	**Phenomena of conceptual understanding in children**
What would happen if there were no computers?			
Specific activity	Work	*"We wouldn't be able to work."*	Children perceive the absence of a computer as a limitation on their work and daily activities. Without a computer, their work would be significantly more difficult or impossible, and they would have to rely on mobile phones, which cannot fully replace a computer. Children also perceive the limited possibilities for online ordering and calculations. They perceive computers as an essential tool for work, learning, and organizing everyday activities.
		"We wouldn't be able to work, but we could. And we wouldn't be able to do some things at home. I have games there. And sometimes I work on it normally."	
		"Then we would have to do everything on our cell phones and we wouldn't have jobs or money."	
		"We wouldn't have any work."	
		"We couldn't work like that."	
	Ordering	*"We couldn't order everything."*	
	Counting	*"We wouldn't know how to count. Only on a calculator."*	
Other	Another consequence	*"Then we wouldn't have anything."*	
	Other solution	*"So we have a TV, for example."*	

He has no idea	I don't know	*1 child*	
What would happen if there was no internet?			
Watching something	YouTube	*"We wouldn't be able to download anything, not even games. We wouldn't have anything, not even YouTube."*	Children perceive the absence of the internet as a fundamental limitation on their access to entertainment, communication, and work. Without the internet, it would not be possible to download games, watch videos or cartoons on platforms such as YouTube, or work from home. They also emphasize the inability to place orders and the limited ability to make phone calls or obtain information. In their minds, the internet is closely linked to the functioning of computers, phones, and tablets.
	Fairy tales	*"Then we wouldn't even be able to watch cartoons."*	
		"So we couldn't watch any cartoons, videos, or anything like that. You can do it even without the internet."	
Specific activity	Playing	*"We wouldn't be able to play on the computer, and we wouldn't be able to work from home."*	
	Ordering	*"It would mean that we couldn't order anything. For example, no toys or a new computer."*	
Something not working	Tablet, computer, phone	*"We wouldn't be able to call and we wouldn't know what happened.*	
		“Nothing would work, not even a computer, phone, or tablet.”	
		"It would break. The computer and all the electronics."	
		"Then the computer wouldn't work."	
	Radiator	*"That wouldn't heat our radiator."*	
What would happen if there was no information?			
We wouldn't know what to do...	happened	*"We wouldn't know anything."*	Children perceive that without information they cannot learn about events or changes. Without information, they would not know how to act correctly. In their understanding, information is important for orientation and functioning in everyday life.
		"They wouldn't know how to do it and something bad would happen."	
		"We wouldn't know if something happened or if something didn't happen."	
	we missed	*"Then we wouldn't know anything. We wouldn't have come and we would be sad."*	
	do	*"Then we wouldn't know what to do."*	
		"Then we wouldn't have anything to order."	
He has no idea	I don't know	*4 children*	

Children perceive the absence (what would happen if they did not exist...) of computers, the internet, and information as a significant limitation on some activities they are accustomed to. Computers are an essential tool for them to work, learn, and organize activities. According to them, the absence of the internet would limit access to entertainment, communication, remote work, and online ordering, while also jeopardizing the functioning of various devices that depend on an internet connection. The absence of information would lead to ignorance, reduced ability to respond adequately to events, and a loss of orientation in everyday life. Children therefore perceive these three components as key to learning, communication, and effective functioning.

Table 4. Fourth level – source of understanding the meanings of concepts

Broader topics	**Narrower topics**	**Children's statements**	**Phenomena of conceptual understanding in children**
How do you know what a computer is?			
People from the family	Parents, grandparents	*"Because my mom and dad told me so. And my grandfather too."*	Children obtain information about the Internet mainly through communication with their parents and grandparents. Some children also mention experiences from their home environment, where they have seen their parents working with computers and the Internet or heard about the Internet.
		"From the fact that my mom is always working at home."	
		"Because I have a mom who is sick now, but she was working the day before yesterday. Yeah, but she doesn't work on that keyboard where the whole computer is, she works on a normal keyboard with a mouse. I have a mouse on my computer too."	
		"From my mom." (2 children)	

	Cousin	*"Well, I think that was my cousin."*	Personal and family contacts are the main source of their knowledge, which suggests that the family is a key mediator of digital experiences in their lives.
Specific activity	Ordering	*"Because we ordered a new cabinet and we already have it."*	
He has no idea	I don't know	*4 children*	
How do you know what the internet is?			
People from the family	Parents, grandparents	*"My mom told me."*	Children acquire knowledge about the internet mainly through communication with their parents and grandparents. Some children describe their own experiences with using various devices and applications, such as games and YouTube, often linking these experiences to instructions and rules from their parents. Some children also claim to have learned about the internet on their own. Overall, children acquire knowledge about the internet through a combination of family mediation and their own activities.
		"From my grandmother and grandfather too."	
		"From my father."	
Specific activity	Playing on a computer, tablet, phone	*"... I have games on all four of them. On the first one, I have vampires. On my mom's, I have... On my dad's, I have some drawings. On the second phone, I have games for two and for one. It's a bit mixed up. On my last phone, I have YouTube. But the kids' version. I watch Diana. I used to watch those boys. But now they've banned me because they were doing stupid things.*	
		"The fact that I mostly play games and my mom works too."	
Self-learning		*"I learned that."*	
		"I found out myself."	
		"From each other."	
He has no idea	I don't know	*3 children*	
How do you know what information is?			
People from the family	Parents, grandparents	*"From my mom."*	Children acquire knowledge about what information is, mainly through communication with their parents and grandparents. Some said that they had acquired this understanding independently. Overall, children acquire knowledge about information through a combination of family mediation and their own experiences.
		"From my grandmother, too."	
		"I probably learned this from my grandfather."	
		"From my mom and dad. They told us."	
Self-learning		*"From each other."*	
Other		*"When I was sleeping."*	
He has no idea	I don't know	*4 children*	

Children acquire knowledge about computers, the Internet, and information primarily through communication with their parents and grandparents. In addition to family mediation, children learn by observing, exploring, and independently using devices and applications (such as games or YouTube). The combination of family influence and personal activity is the main way in which children acquire knowledge about these digital concepts and tools.

4. Discussion and Conclusions

Children perceive computers, the Internet, and information as concrete and practical tools closely related to everyday activities, including work, communication, entertainment, and information gathering. They also learn the meaning of these concepts indirectly through the use of available digital technologies. They perceive computers and the internet as multipurpose tools that are interconnected based on their intuition or experience. Children understand the concept of "information" less comprehensively and with a certain degree of uncertainty. They perceive computers, the internet, and information mainly as part of family life. The experiences of their parents and grandparents play an important role in shaping their ideas, complementing their own activities and experiences. Children perceive the absence of computers, the internet, or information as a limitation on some of the activities they know and observe in their families. They consider computers to be an irreplaceable tool for work and organizing activities, the internet to be essential for communication, entertainment, and access to services, and information to be key for orientation in the environment and adequate response to various events. This confirms Piaget's theory that even at the

end of the preschool period, children still think concretely. Children explained concepts based on concrete experiences and visual stimuli. More abstract aspects appeared only marginally in children's statements. In accordance with Piaget's theory of cognitive development, the meaning of children's statements can be interpreted at the level of thinking in the preoperational stage of development. These findings are also consistent with Bloom's theory of concept acquisition. Children's direct experience with concrete objects is essential for understanding the meaning of words. They understand their connections in everyday activities and situations in a specific sociocultural space. This phenomenon is consistent with Vygotsky's theory of sociocultural development. We also confirmed Mertalová's (2019) finding that children did not associate computers with other objects, such as the fact that computers are also found in other forms of technology, such as cars, washing machines, or toys. The children in our sample also perceived computers can be used to search for information, but unlike Mertal's research, they associated the use of computers with the presence of the internet. Our findings confirmed those of Oyedoyin, Sanusi, and Ayanwale (2024) that children recognize computers as devices based on their appearance. The principles of their functioning and technical construction are still foreign to them. What children knew was mainly based on observation and activities in the family environment. Despite the small number of respondents, the study provides authentic examples of how children at the end of preschool education understand the meaning of three concepts in the field of digital literacy. The survey findings underscore the importance of integrating digital technologies and information literacy into education at an early age, with the family environment playing a key role in their acquisition. Further research in this area can help to understand children's needs and tailor education accordingly.

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