The Concept of the Digital Play by S. Edwards in the Context of the Cultural-Historical Paradigm

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The article presents an analysis of the works of S. Edwards devoted to the development of a holistic concept of digital play in the tradition of the Cultural-Historical Scientific School. The main difficulties are connected with the transformation of the idea of mediation into the context of digital technologies. We analyzed the understanding of the idea of mediation in the works of L.S. Vygotsky, A.N. Leontiev, Y. Engeström. On the basis of the studies of O.K. Tikhomirov, O.V. Rubtsova, S.A. Smirnov, G. Rückriem and studied how the concept of mediation can be transformed in the era of digital technologies. We also analyzed the transformation of the key concepts of the cultural-historical psychology in the works of S. Edwards, such as children's play. The contemporary children's play reflects the processes of digitalization and cultural globalization of contemporary childhood. S. Edwards introduces the concept of convergent play as the leading activity of contemporary children. Convergent play is characterized by the blurring of boundaries between traditional and digital play and the integration of digital technologies into the daily lives of children. The author argues that it is necessary to create a holistic concept of digital play corresponding to the cultural-historical tradition.

Keywords: digital play, mediation, S. Edwards, converged play, play activity.

Концепция цифровой игры С. Эдвардс в контексте культурно-исторической парадигмы

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В статье представлен анализ работ С. Эдвардс, посвященных разработке целостной концепции цифровой игры в традиции культурно-исторической научной школы. Основные сложности связаны с трансформацией идеи опосредования применительно к цифровым технологиям. Рассматривается осмысление идеи опосредования в работах Л.С. Выготского, А.Н. Леонтьева, Ю. Энгестрёма. На примере работ О.К. Тихомирова, О.В. Рубцовой, С.А. Смирнова, Г. Рюкрима показаны возможные способы переосмысления идеи опосредования в эпоху цифровых технологий. Осуществлен анализ трансформации ключевых понятий культурно-исторической психологии в работах С. Эдвардс, посвященных детской игре. В современной детской игре отражаются процессы цифровизации и культурной глобализации современного детства. С. Эдвардс вводит понятие конвергентной игры как ведущей деятельности современного ребенка. Конвергентная игра характеризуется стиранием границ между традиционными и цифровыми играми и интеграцией цифровых технологий в повседневную жизнь детей. Делается вывод о необходимости создания целостной концепции цифровой игры в русле культурно-исторической традиции.

Ключевые слова: цифровая игра, опосредование, С. Эдвардс, конвергентная игра, игровая деятельность.

Introduction

In the last few years researchers all over the world point out to qualitative changes in preschooler's play activity, including in particular very early acquaintance with gadgets and their early introduction into the play. According to the service, contemporary children get acquainted with gadgets at the age of 6 months [13] and around 88% of parents consider that by late preschool age children have to be capable of using digital media on the own [4]. In this context researchers more and more often speak about the emergence of a new phenomenon which is coined *digital play* [9; 10].

At this very moment there are numerous definitions of digital play. M. Fleer, for example, regards digital play as "the creation of an imaginary digital situation, supported through a specialized form of digital talk where the themes of the play are drawn from children's everyday experience" [20, c. 87]. N.N. Veresov and N.E. Veraksa consider digital play exactly as traditional children's play activity which possesses its system of rules, plots and play actions [26]. O.V. Rubtsova and O.V. Salomatova interpret digital play as play activity, mediated by the use of digital media and various kinds of digital content, where real and virtual objects coexist in real time mode and where the new form of mediation (mobile phone, tablet, etc.) may be regarded exactly as a essential attribute of play as a traditional toy [10].

Digital play exactly as traditional play activity is nowadays an important part of preschooler's lives. However, there are very few researchers of digital play. In the works by O.V. Rubtsova and O.V. Salomatova [9; 10] perspectives of applying Cultural-Historical Theory for understanding the phenomenon of digital play are discussed. The authors analyze how digital play is interpreted in the works by M. Fleer, J. Marsh, N.N. Veresov and N.E. Veraksa etc. At the same time the authors have never focus on the works of a well-known Australian researcher S. Edwards. In her research S. Edwards applies both notions of the Sociocultural Theory and the ideas of C. Hutt. The sociocultural approach in its turn may be considered as one of the posable interpretations of the Cultural-Historical Theory, which is quite widespread in the foreign scientific tradition [23].

The goal of this paper is to analyze, to what extend Edward's understanding of the phenomenon of digital play lies in the tradition of the Cultural-Historical Theory. The following research tasks were set in this article: 1) to determine the understanding of the key concepts of the Cultural-Historical Theory by the classics of the Russian tradition and by the representatives of the Sociocultural Approach; 2) to generalize the possible approaches to research of digital media and 3) to analyze the peculiarities of understanding digital play in the works by S. Edwards.

The problem of mediation in the works of L.S. Vygotsky, A.N. Leontiev, and Y. Engeström

Despite S. Edwards considering herself a follower of L.S. Vygotsky, it is necessary to highlights that her scientific views have been formed within the English-speaking scientific discourse. The researcher positions herself as a representative of Sociocultural Theory. According to M. Dafermos, the Sociocultural Theory, strictly speaking, is not equivalent to Cultural-Historical Theory but represents its North American interpretation. Thus, Vygotsky's theory has become just one of many sources of inspiration for the founders of Sociocultural Theory [3]. Due to this circumstance, there are fundamental differences in the interpretation of the key concepts among the followers of Vygotsky's theory and the supporters of Sociocultural Theory. In particular, this remark concerns the idea of *mediation* (Russian: «опосредование»).

L.S. Vygotsky's idea of *tool mediation* (Russian: «орудийное опосредование») has been borrowed from the works of S. Edwards.

L.S. Vygotsky depicted the essence of mediation as a triangle (fig. 1), where two stimuli A and B are directly connected in the natural process of activity. If the activity has an instrumental nature, it occurs through the psychological tool C [1].

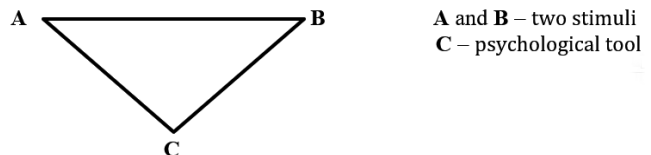**A** and **B** – two stimuli
C – psychological tool

Fig. 1. Relationship between instrumental and natural processes (according to L.S. Vygotsky)

L.S. Vygotsky distinguished between *technical* and *psychological tools* when discussing tool mediation: "The essential difference between a psychological tool and a technical tool lies in its direction of action to-

wards the psyche and behavior, whereas a technical tool, also being inserted as an intermediary between human activity and the external object, is directed towards causing certain changes in the object itself; a psychological tool does not change anything in the object; it is a means of influencing oneself (or others) — the psyche, behavior — rather than a means of influencing the object" [1, p. 106]. Expanding on the idea of mediation, L.S. Vygotsky introduced the concept of a *sign* to denote "any artificially created conditional stimulus by a human being, which serves as a means of mastering behavior — either someone else's or one's own" [2, p. 78]. There are significant differences between *tools* and *signs*. With a tool, a person influences the object of activity and must bring about changes in that object. A sign is a means of psychological influence on one's own or someone else's behavior [2, pp. 89—90].

A.N. Leontiev further developed Vygotsky's ideas on mediation. He attributed the mediating role not to signs but to activity itself: "...the child's consciousness is the product of his human activity in relation to the objective reality, taking place in the conditions of language, in the conditions of speech communication" [6, p. 18]. Thus, while according to L.S.Vygotsky, the process of mediation takes the form of "subject-sign/tool-object," for A.N. Leontiev, it takes the form of "subject-activity-object."

Like many foreign authors, S. Edwards relies on the interpretation of Vygotsky's works proposed by the well-known Finnish researcher Y. Engeström [5; 11]. While Engeström's ideas have found wide practical application, his concept significantly differs from Vygotsky's original concept and represents more of a combination of Cultural-Historical Theory, Activity Theory, and elements of other theories [3]. Y. Engeström does not distinguish labor-mediated activity and activity one's own behavior, that means he does not distinguish between tool mediation and sign mediation. Y. Engeström's triangle of mediation expands to include concepts such as society, rules, division of labor, etc., but it omits the distinction between psychological tools and signs [5; 11; 12].

Engestr m's concept has been often criticized by researchers who have access to both Russian and English works of L.S. Vygotsky [3; 5; 11; 12]. The criticism mainly revolves around Engeström's disregard for fundamental disagreements between followers of Cultural-Historical Theory and Activity Approach, as he combines these two concepts into a single theory known as Cultural-Historical Activity Theory (CHAT) [3; 21].

Digital technologies in the context of mediation problem

Under the information revolution recently many researchers have been rethinking the problem of mediation, in particular, focusing on various approaches to digital devices as new means of mediation. Several directions of research can be distinguished in this area.

Supporters of the *first direction* believe that, on the one hand, digital technologies mediate the use of signs. On the other hand, they believe digital technologies influence both practical human activity and internal mental processes. Accordingly, they affect both inter- and intrapsychic functions. Thus, the changes occurred have a different nature than those occurring in sign mediation activities, one can speak of the emergence of new qualities of awareness and voluntariness [14].

In the framework of the *second direction*, digital technologies are considered both tools and signs. "In some circumstances, a computer or mobile phone can primarily act as a tool used for information transmission (sending emails or SMS messages), and in other circumstances, the same means can act as a sign mediating various mental functions and processes (communication through social networks, participation in computer games, etc.)" [8, p. 119]. At the same time, it is difficult to clearly define the boundary between instrumental and sign use, as the transition from one type to another occurs very quickly (sometimes these processes unfold in parallel) [7; 8].

Supporters of the *third direction* believe that the use of digital technologies simplifies the structure of activity: "There is no working interval between pressing the button and the result, i.e. the actual work, the objective action, the result of which became a certain product, and there is no feeling of involvement in this action and result. Thus, we obtain the same stimulus-response behavior pattern" [12].

In the framework of the *fourth direction*, digital technologies are considered through the prism of media theory. Its supporters depart from the concepts of tool and sign and focus on describing and studying the changes in the environment caused by the introduction of digital technologies. They rely on the ideas of Media Theory (H.A. Innis, H.M. McLuhan, etc.). According to these authors, this theory can provide the methodological tools necessary for the formation of a model, stages, and laws of transition between different leading media[1] and thus help in the development of a new concept of the environment [11].

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[1] Media (plural form of Latin "medium" — "middle", "intermediary") is a term widely used in works dedicated to the issues of digitization ("digital media", "new media", etc.). It simultaneously serves as a synonym for the concept of "technology" and the concept of "means", but it can also have other meanings.

Refraction of the Cultural-Historical Theory in the works by S. Edwards

S. Edwards is one of the leading contemporary researchers of digital play and convergent play (see the concept of convergent play below). In her works, an attempt is made to create a comprehensive concept of digital play based on the ideas of L.S. Vygotsky.

Referring to the aforementioned work of L.S. Vygotsky [1], S. Edwards understands the idea of tool mediation (Russian: «орудийное опосредование») as facilitating human activity through the use of culturally conditioned tools. She schematically represents the idea of tool mediation as a triangle, with a person at one base point, an object at another, and the tool at the vertex of the triangle. Tools can become embedded in cultural tradition over time, so the tool begins to be implicitly associated with the object of activity. This process can be called *implicit mediation*. As a person masters the use of a particular tool, the object of their activity changes, and the process repeats [16].

Using the mediation triangle, S. Edwards explains the educational value of play[2]: at one base point of the triangle is the preschool worker/educator, at the other is the child's opportunity to play. The theories of play serve as the tool, i.e., the rules that the educator relies on when developing a scenario for educational play during their session. Here, theories of play act as implicit mediator [16]. S. Edwards positions digital play among cultural tools. Digital play is derived from the cultural context in which the child is situated, and on this basis, it should be considered as *tools of activity* [17]. Mastering a new tool — digital play — allows the child to expand the range of possible play actions. However, digital play has not yet firmly established itself in the cultural tradition, so it is premature to speak of its implicit nature [16].

It seems that S. Edwards' understanding of mediation reflects more the views of Y. Engeström than L.S. Vygotsky himself. Thus, in S. Edwards' articles, as well as in the works of Y. Engeström, there are no distinctions between tool and sign mediation. They only talk about tool mediation, while sign mediation is not mentioned at all. There may be several reasons for this. Firstly, the fact that Y. Engeström combines the ideas of L.S. Vygotsky's and A.N. Leontiev's theories in his concept [3; 5]. Secondly, problems related to accurate translation. The term "mediation" is often used by Russian authors to denote tool mediation (Russian: "опосредование"). The term "опосредствование" is used to denote sign mediation. However, when translating, the words "tool" and "sign" may be omitted, and both tool and sign mediation are translated as "mediation" [12].

Besides the idea of mediation, S. Edwards focuses on other important concepts of cultural-historical psychology: leading activity (Russian: «ведущая деятельность»), higher mental functions (Russian: «высшие психические функции»), and the social situation of development (Russian: «социальная ситуация развития»).

Leading activity refers to the ways of transforming existing modes of thinking and cognition into more complex forms of psychological engagement, which are connected to the social and cultural situation that forms the basis for learning and development. Leading activity is not dominant during a specific period of development; rather, it functions as «... a bridge that supports a child's transition from one psychological function to another across the developmental lifespan» [18]. Mastery of *leading activity* leads to a change in the *social situation of development*, which in turn gives rise to a new *psychological function*. The psychological functions that emerge in children from birth to adolescence include sensory-motor function, perception, emotions, memory, and thinking [18]. It is likely that S. Edwards understands higher mental functions as these psychological functions.

According to L.S. Vygotsky's theory, higher mental functions initially arise as forms of collective behavior in children, as forms of cooperation with others, and only later do they become individual functions of the child themselves, i.e., the environment serves as the source of the formation of higher mental functions. Leading activity connects the child with elements of the environment that are sources of psychological development during this period. In this activity, fundamental personal innovations are formed, psychological processes are restructured, and new types of activity emerge [1; 2].

In addition to the ideas of Cultural-Historical Psychology, S. Edwards relies on the works of C. Hutt in her research on play. C. Hutt's work aimed to find differences between *investigation* and *play* activities of children [24]. She pointed out a fundamental difference between these types of activities: «The implicit question in the child's mind during investigation seems to be "*What can this object do?*" whereas in play it is "*What can I do with this object?*"» [22, p. 70]. Based on this differentiation, C. Hutt divided children's activities into two major classes: *epistemic* behavior and *ludic* behavior. The boundaries between epistemic and ludic behavior are flexible, but epistemic behavior precedes ludic behavior because initially, the child learns to interact with the object.

[2] The European system of preschool education is based on learning through play, therefore special attention is paid to research into the educational potential of play activities.

Epistemic behavior ("What can this object do?") manifests as the child's desire to acquire new knowledge or information about the object and is goal-oriented or focused on the end product. K. Hutt identifies the following types of epistemic behavior: problem-solving, exploration, and skill acquisition.

Ludic behavior ("What can I do with this object?") is aimed at deriving pleasure from spontaneous activity without a specific goal. Children's play involves pretending, taking on a certain role, providing enjoyment, and developing imagination. K. Hutt proposes two categories of ludic behavior: fantasy play and repetitive play [22].

According to S. Edwards, any object that initially attracts epistemic and then ludic behavior can be equated to a tool because the use of tools can change the object of activity. This observation also applies to digital objects (e.g., children's digital cameras, etc.) [15].

In our view, the researcher has made a very important attempt to reinterpret digital play within the framework of Cultural-Historical Psychology, complementing it with the ideas of C. Hutt. However, the author's understanding of the foundations of Cultural-Historical Psychology needs further discussion and clarification. Despite this, S. Edwards' concept highlights the crucial problem for researchers of integrating the realities of the digital society into Cultural-Historical Psychology and allows us to see the play of contemporary children as a complex phenomenon that requires interdisciplinary research.

Understanding of contemporary children's play in the S. Edwards's work

S. Edwards is interested in the preschoolers' play from the perspective of its educational value. The main goal of her research on play is to uncover the educational potential of new forms of play and help educators utilize these new possibilities to make activities with children more productive. Digital technologies can modify traditional games (e.g., recording joint play on video, playing game scenarios in digital space, etc.).

According to S. Edwards, the process of introducing children to digital devices can be seen as a manifestation of *epistemic behavior*: initially, the child explores the functions of the digital device, and then they can use it as a tool to create new game scenarios. In other words, mastering a new tool allows for a change in the object of activity [16].

S. Edwards believes that the use of digital devices is an integral characteristic of the social situation of development for contemporary children. The processes of digitization occur parallel to the processes of *cultural globalization* in modern childhood. Cultural globalization exposes children to characters and narratives of mass children's culture, while digitization ensures that mass culture constantly surrounds the child. The author refers to this phenomenon as *the digital consumerist cultures* [18; 24].

A new cultural experience finds its reflection in the play activities of modern children. The author identifies the following types of games:

1) Generic games — games with traditional toys (such as a toy train, farm set, etc.);

2) Consumer games — games using branded toys. Typically, these toys have a backstory created by the brand developers and are associated with mass culture (e.g., Thomas the Tank Engine, Peppa Pig, etc.);

3) Digital games — children's use of gaming applications [24];

4) Digital-consumerist games — digital games based on characters and stories from mass culture (e.g., "Thomas and Friends: Minis," "Safari Day with Peppa Pig," etc.). According to S. Edwards, digital-consumerist games have greater developmental potential than generic or consumer games [24];

5) Converged games — games where the boundaries between traditional and digital games blur, and information and communication technology is integrated into children's everyday lives [17; 19].

Converged play as the leading activity of contemporary children

Converged play involves children participating in both traditional and digital games, influenced by cultural globalization and digital media. According to the author, converged play is the leading activity among modern children [17].

Since converged play is a new phenomenon, its nature and educational possibilities have not been fully explored. To study converged play, S. Edwards suggests using a new tool called *web-mapping*. Visually, this tool appears as a network consisting of sectors and circles (fig. 2).

Each sector represents a type of activity of preschoolers related to the use of digital technologies (digital toys, tablets, etc.). The circles represent more "traditional" forms of activities for preschoolers: role-playing games, construction, active games, etc. The intersection between the sector and the circle represents converged episodes of play, where the distinction between digital and non-digital activities disappears. This tool allows educators to see and apply converged play in practice [17].

Based on the analysis of empirical data, S. Edwards identifies three characteristics of converged play (see table) [17].
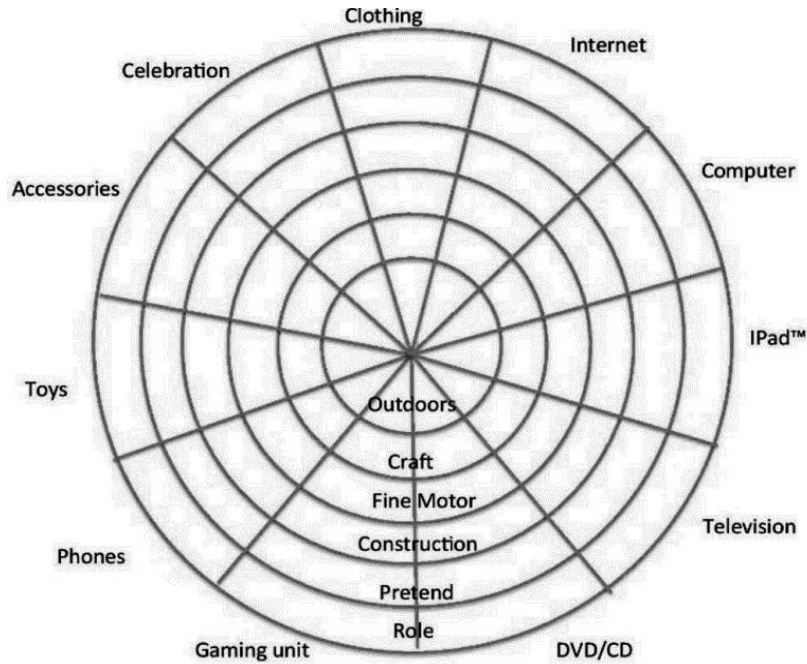
Fig. 2. Web-mapping by S. Edwards [17]

T a b l e

Characteristics of converged play, according to S. Edwards

Name of play	Explanation	Example
Multi-modal play	Simultaneous use by educators and children of both «traditional» interactions (speaking, listening, drawing, touching, etc.) and «digital» interactions (using tablets, etc.), including for educational purposes.	The educator knew that the child was playing with LEGO and using digital LEGO applications. She suggested the girl play with the construction set. The girl started telling the educator about one of the LEGO characters. The educator decided to clarify the character's story, took a tablet, and entered a search query. The educator shared what she read on the Internet with the girl, and they continued playing.
Global-local play	Joint use by educators and children of characters and storylines from mass children's culture in play activities, including educational games.	The educator made cardboard «Pokémon» figures from the game «Pok mon Go» and hid them in the kindergarten playground. Each child had to find the complete set of «Pok mon.» The children had to find the figures, match the ones they already had with the required set, count them, negotiate exchanges, etc.
Traditional-digital play	The possibility of combining material, social, and digital components in children's play to develop cognitive, communicative, and social skills. Essentially, this characteristic shows the absence of differences between traditional play and digital play as separate activities for children.	The educator suggested using a figure of Elsa from the movie «Frozen» for the game. The children had previously watched the movie and knew its storyline. Together with the educator, the children created a sketch of Elsa's palace, made it out of cardboard and paper, and started playing in it.

Thus, S. Edwards offers a new perspective on the play activities of modern children. Her proposed method of study helps educators identify elements of transition between digital and non-digital activities in specific episodes of converged play.

Conclusion

The problem of analyzing contemporary forms of children's play activity is one of the current challenges in contemporary psychological and pedagogical science. The main difficulty lies in the lack of a common understanding of the place of digital technologies and digital play in the system of concepts of the Cultural-Historical Psychology.

S. Edwards, based on the ideas of L.S. Vygotsky, attempts to reinterpret the key concepts of the Cultural-Historical Theory in relation to the realities of contemporary childhood. At the same time, as a representative of the Sociocultural Theory, S. Edwards interprets these concepts based on the understanding by such authors as

Y. Engeström, which significantly determines the peculiarity of her scientific views.

In fact, when considering the phenomenon of digital play, the researcher relies exclusively on the ideas of tool mediation, without taking into account sign mediation. Digital technologies are considered by S. Edwards as derivatives of the cultural context of the activity tools. The interpretation of important concepts of the Cultural-Historical Theory, such as higher mental functions, social situation of development, and social environment, requires additional clarification. It seems that the author replaces them with the concepts of "psychological function" and "social and/or cultural situation," respectively.

The phenomenon of converged play, understood as a specific form of play activity characterized by constant interweaving of traditional and digital forms of play, as well as the use of narratives and characters from digital culture, is also promising for further research.

The directions of research developed by the author are practically absent in contemporary Russian science, which makes this issue extremely promising and relevant.

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