

Concept formation and the text in digital culture

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ABSTRACT

During cultural-historical development, our learning processes have evolved to using diverse “symbolic artifacts – signs, symbols, texts, formulae” (Kozulin et al. 2003: 15) as mediators of knowledge and meaning. The phenomenon of a text became one of the most advanced of these mediators, as it goes beyond the mere mediation of knowledge. According to Lotman, the text is a semiotic system “capable of transforming messages received and generating new ones, a generator of information” (1988: 57). The evolution of digital culture and the new media environment have shaped the representation and interaction with texts by “changing the static printed text into a dynamic one” (Ojamaa and Torop 2020: 52). Digitality, multimodality and transmediality became intrinsic characteristics of texts in the new media environment. While this emphasizes the value of acquiring the concept of the text within formal and informal education as an “intellectual device” (Lotman 1988: 55) and a cultural tool for accessing knowledge in digital culture, the semiotic and cognitive processes beyond the acquisition of the concept of the text remain under-researched. The paper represents the first step in the broader study of how young learners acquire the concept of the text in contemporary digital culture. The research aims to identify semiotic processes behind acquiring the concept of the text in digital culture. To this purpose, we introduce Vygotsky's theory of concept formation (2012) as a methodological tool for semiotic research in learning and education.

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Introduction

The dominant way of human learning is the process mediated by symbolic tools (Vygotsky 2012). The processes underlying human learning evolved from learning through direct stimulus towards complex mediated forms of learning through “symbolic artifacts – signs, symbols, texts, formulae” (Kozulin et al. 2003: 15). The process of symbolic mediation in learning was described by Lev Vygotsky in what we know today as cultural-historical theory (Yasnitsky et al. 2014). On the one hand, it emphasizes the role of symbolic tools in human cognitive processes. On the other hand, it gives a socio-cultural perspective to the learning processes by acknowledging that the evolution of culture and society also influences how we receive, interpret, and share knowledge.

According to the cultural-historical theory, culture introduces various symbolic means for mediating knowledge, such as signs and sign systems (Yasnitsky et al. 2014: 47-62). The role of signs and sign systems in learning has been widely addressed in recent semiotic research in the fields of edusemiotics (Semetsky and Stables 2014; Olteanu and Campbell 2018; Deely and Semetsky 2017), emphasizing the role of semiosis and semiotic engagement, and semiotics of culture (Ojamaa et al. 2019) with its focus on the role of text, culture, cultural communication processes and media in conceptualizing education. In the course of cultural-historical development, texts have become one of the most sophisticated mediators in learning. According to Lotman, the text is a semiotic system “capable of transforming messages received and generating new ones, a generator of information” (Lotman 1988: 57). The recent cultural shift, brought about by the evolution of digital culture and the new media environment, has shaped the representation, functions, and relations between texts by “changing the static printed text into a dynamic one” (Ojamaa and Torop 2020: 52). Digitality, multimodality and transmediality have become intrinsic characteristics of texts in the new media environment, inevitably changing our conceptual understanding of a text, especially as a mediator of learning.

Recent advances in semiotic studies (Ojamaa et al. 2021; Ojamaa and Torop 2020) show the value of analyzing text’s different aspects and functions in digital culture and the new media environment. The results of such studies can work as a foundation for developing educational practices at schools by elaborating the concept of the text as a tool for accessing knowledge mediated by diverse forms of texts in contemporary digital culture. However, the semiotic processes underlying the concept formation of the phenomenon of text in formal and informal learning and during individual development still need to be researched. Thus, we face the question of how semiotic science can address the process of learning the concept of the text in general and in the context of digital culture in particular.

Thus, our study aims at identifying semiotic processes underlying the acquisition of the concept of the text in digital culture. To do so, we employ Lev Vygotsky’s theory

of concept formation (Vygotsky 2012: 103-222) in our methodology. While Vygotsky's theory builds a methodological link between semiotics and psychology, it also makes it possible to examine the formation of meanings of complex abstract phenomena as a process. Consequently, Vygotsky's theory of concept formation is not merely a research tool for describing the processes underlying the acquisition of complex meanings but also a sophisticated methodological tool for semiotic studies aiming to investigate diverse psychological, cognitive, and semiotic processes, including learning, memorizing, or meaning-making.

Our study aims to (1) identify the role of text as a semiotic phenomenon in learning from the perspective of the semiotics of culture; (2) analyze the change in the concept of the text in contemporary digital culture and the challenges it provides for learning practices; (3) address Vygotsky's theory of concept formation as a tool for analyzing learners' acquisition of a concept of text in digital culture; and (4) formulate the principles underlying the acquisition of the concept of the text in contemporary digital culture.

2. Learning, text, and digital culture

In contemporary culture, the phenomenon of text represents one of the key carriers of information and knowledge (Ojamaa and Torop 2020; Ojamaa et al. 2019). As a result, texts play a significant role in human learning processes from a very early age. Many semiotic studies have emphasized a text's significant educational role (e.g., works by Juri Lotman). More specifically, the semiotics of culture considers the notion of text as a critical unit for "its conceptualization of education" (Ojamaa et al. 2019: 155). The following section addresses the concept of the text as a source of learning and provides a brief overview of the changes brought to the concept of the text by contemporary digital culture.

2.1. Learning through texts

The educational value of text as a semiotic phenomenon originates from its function as a mediator of information and from its multifaceted role in culture, social and artistic communication. As a result, acquiring the concept of the text is necessary for developing various cognitive and semiotic tools for accessing, analyzing, and sharing knowledge communicated in culture within various forms and mediums.

In this study, we will rely on the notion of text established in the framework of the semiotics of culture and, more specifically, that was introduced by Juri Lotman (1988). Lotman described the text as a complex semiotic system with specific functions, boundaries, and relationships with the reader (Lotman 1977, 1988). He also described it as "a complex system storing diverse codes capable of transforming messages received and

generating new ones, a generator of information with the traits of an intelligent person" (Lotman 1988: 57). In other words, the text represents a mechanism of meaning generation. This emphasizes another essential role of text in the context of learning. According to Lotman, the phenomenon of text possesses three main functions (Lotman 1994, 1990: 11-19): communicative function (conveying information from a sender to a receiver), creative function (generation of new meanings), and memory (preservation of various information).

Another important feature of text in learning and education is its ability to "[m]anifesting intellectual properties" (Lotman 1988: 55). A text "becomes an interlocutor on an equal footing, possessing a high degree of autonomy" (Lotman 1988: 56). Thus, in terms of the learning process, text plays several different roles, including (1) conveying information, (2) collective memory, (3) mediation aspect in autocommunication, (4) dialogic function, and (5) mediation of cultural context (Lotman 1988). According to this perspective, learning via a text can be addressed as a learner's dialogue or communication with a text (Ojamaa et al. 2019: 155).

Semiotics of culture conceptualizes education based on the notion of text and provides a sophisticated analysis of learners' "dialogue or communication with the text" (Ojamaa et al. 2019: 155) in the context of acquiring diverse educational literacies. In this respect, the key literacy that originates from acquiring the concept of the text is cultural literacy. It presupposes the development of "[h]abits of reading and interpretation, skills of textual analysis, strategies of keeping texts in cultural memory and texts as mediators of (historical, mythological, psychological) time and space" (Ojamaa et al. 2019: 155). In contemporary digital culture, this literacy can be considered an umbrella term for other related literacies, inducing media and transmedia literacies. As a result, the semiotics of culture research in the context of learning and education provides a sophisticated analysis of the phenomenon of text, which can serve to develop learning and teaching practices in the context of acquiring the concept of the text.

In addition, the phenomenon of text features an educational value in the context of cultural literacy when we deal with artistic texts. Lotman defined the phenomenon of artistic text as a text that "can be viewed as a multiply encoded text" (1977: 59). Artistic texts are essential elements of the cultural communication processes, including cultural auto-communication, transmediality, and crossmediality (Ojamaa and Torop 2015). From the educational perspective, understanding textual dynamics is essential for contemporary learning as a means to access knowledge mediated via artistic texts.

The value of acquiring the concept of the text within general education practices also has cognitive and developmental dimensions. According to Lev Vygotsky's cultural-historical theory (2012), one of the main aspects of specifically human learning is that it is mediated via symbolic tools. These symbolic tools can be represented by

“different signs, symbols, writing, formulae...” (Kozulin et al. 2003: 23). When internalized, a sign system “plays a role of a stimulus-means in any psychological operation” (Ivanov 2014: 497) and cognitive processes, including behavioral control, learning, memory, meaning-making, etc. Thus, sign systems act as “inner psychological tools” (Kozulin et al. 2003: 24; Kozulin 1998). An essential aspect of psychological tools is that they are primarily products of culture, which emphasizes the significant influence of culture on human psychological and cognitive development. Following Vygotsky’s theory, we can consider a text one of the most sophisticated psychological tools (Kozulin 2003), a complex symbolic mediator of human psychological and cognitive processes. As a potential psychological tool, therefore, text plays a vital role in various psychological processes, including learning, memory, and meaning-making.

The development of the learner’s reading behavior and analytical skills concerning literary texts has been a focus of many educational policies within formal education (Milyakina 2018: 571-572). We can argue that in general education, the concept of the text has been traditionally learned in literature courses, which limits the description of the concept of the text to the phenomenon of a written literary text. However, this does not cover the needs of contemporary learners, who are involved in daily communication with a diverse range of popular culture texts of various modes and modalities.

2.2. The concept of the text in digital culture

The development of digital culture and the introduction of new media have shaped the representation of text in culture and the possibilities for establishing relations with its metatexts (Ojamaa et al. 2021; Jenkins 2010). As a result, the evolution of digital culture has introduced new learning and reading behaviors and thus shaped the current understanding of literacy (Kress 2003). The reason for this is the specific characteristics of a text that have become explicit in digital culture, such as digitality, multimodality, interactivity, and multiplicity.

Digitality. One of the essential changes that the digital age brought to the textual and reading experience is the introduction of digital text. This resulted in “turning a static printed text into a dynamic one” (Ojamaa and Torop 2020: 52). According to Ojamaa et al. (2021: 738-739), it is not only the paradigm of text that has been changed by digitality but also the intertextual relations. The evolution of a digital text has been influenced mainly by the divergence processes in culture, which can be characterized by multimodality, multiplicity, and fragmentation (Ojamaa et al. 2021: 739-742). The new paradigm has initiated a change in the reading experience, conceptualized under *digital reading* (Ojamaa and Torop 2020). This process does not merely presuppose a different mediation of meanings but also requires readers to acquire different skills that will allow meaning-making within digital reading (Ojamaa et al. 2021).

Multimodality. Digitalization has made available a broader range of modes and modalities for mediating meanings. As a result, multimodality became an essential characteristic of most texts in the digital era. However, multimodality is not limited to merely the diversity of representation of a text in various modes and modalities. According to Gunther Kress, the evolution of modes and the spread of texts among them presuppose “[t]he changes in the conditions surrounding literacy” (Kress 2003: 35). The meaning is conveyed not only through a text itself but also via the sign systems through which a text is communicated. Finally, Kress points out that “we need now to gather meaning from all the modes which are co-present in a text” (Kress 2003: 35). From the learning and reading perspective, it provides an additional dimension to the acquisition of the concept of the text in the context of contemporary culture.

Interactivity. Another feature of textual experience brought about by the increasing digitalization of texts and the introduction of new media is the aspect of interactivity (O’Neill 2008). As regards the concept of the text in the digital age, interactivity significantly influences how one communicates with texts, namely shaping the communicational function of texts (Lotman 1988) and making it more explicit. Digital interaction made another step in moving a text toward a more fluid phenomenon by shaping its boundaries. The studies (e.g., Beauchamp and Kennewell 2010) addressed the diverse educational potentiality of interactivity, which includes its role in the ICT in teaching and learning practices. In addition, recent studies (Sánchez-García and Salaverría 2019: 8) emphasize that interactivity’s educational role is not limited to increasing the learner’s engagement but extends to impacting the cognitive and psychological processes involved in learning. The principle of interactivity in textual experience has been widely explicated in digital platforms, where the reading experience is based on the principle of convergence and divergence in culture and where “textual fragments are presented in a manner that allows for the creation of a holistic understanding of the text” (Ojamaa et al. 2019: 155).

Multiplicity and fragmentation. According to Ojamaa and Torop, digitalization “ascribed a new meaning to concepts such as repetition in culture or intertextuality” (2015: 68). Digital culture has made the production and sharing of text much more effortless. As a result, it led to a more active role of a reader in contributing to the textual multiplicity and cultural autocommunication processes. Thus, a famous classical novel may receive hundreds of adaptations and new versions in various art forms, modes, and modalities. An active role of readers in participatory culture, e.g., fun fiction, turns them into prosumers through various everyday tools, e.g., smartphones. At the same time, prominent content creators (i.e., publishing houses, film studios, etc.) also actively participate in this process, making new versions, adaptations, spin-offs, and other metatexts of the original stories. One of the examples of the process of multiplying a text in culture is the process of transmediality, which Jenkins characterized

as a “dispersal of media content across media platforms” (Jenkins 2010). The evolution of a text within transmedia practices is related to “the aspect of transformation: expansion of narrative onto different media platforms, changes and additions of meaning brought along by this growth” (Ojamaa and Torop 2015: 62). Thus, a famous classical novel may be a part of a vast transmedia universe, which consists of various adaptations (cinema, theater, comic books, etc.) of the story in various modes and modalities, products of participatory cultures (fanfiction, memes, etc.), references in other texts or marketing products. Each version does not merely multiply the original text, but contributes to the unified whole.

Given the almost unlimited possibilities in mediating meaning through various sign systems, a text in its cultural semiotic framework remains the key mediator of meaning and knowledge. However, by reshaping the relational and representational characteristics of texts, digital culture has also changed the conceptualization and perception of a text as a unified whole. A text cannot be associated with merely printed texts anymore. As a result, digital culture introduced the phenomenon of digital text, which in the semiotics of culture is characterized by “multimodality (combining verbal and pictorial channels), variability (appearance of one text in many versions) and fragmentation (reading fragments instead of whole texts)” (Ojamaa et al. 2021: 738). The introduction of a digital text also brings with it new habits of reading, known as digital reading (Ojamaa et al. 2021).

This introduces a challenge specifically for literature courses, where young learners are usually supposed to acquire the concept of the text. Therefore, it is crucial to address “the distance between formal educational environments and the extremely active ‘digital lives’ of teens in social media and online environments” (Scolari et al. 2018: 810). The changes that happen to the concept of the text in digital culture also emphasize the need for contemporary education, psychology, and semiotic science to develop an understanding of how young learners acquire the concept of the text within formal and informal educational practices.

3. Learning the concept of the text in digital culture

While recent semiotic research has variably addressed the phenomenon of textuality in digital culture, the analysis and topology of digital texts, and their role in contemporary cultural communication processes, few attempts have been made to examine how the understanding of the phenomenon of text is developed and used in meaning-making.

A methodological tool that we can use for such analysis is Lev Vygotsky’s theory of concept formation (Vygotsky 2012: 103-222), described in the framework of what

we know today as cultural-historical theory (Yasnitsky et al. 2014). The value of Vygotsky's theory for semiotic studies relies on its ability to address higher psychological processes through a semiotic perspective by providing the "understanding of human high psychic functions on the base of describing the dominant role of the signs" (Ivanov 2014: 488). The methodological value of Vygotsky's approach is, to a significant extent, supported by empirical research conducted by him and his colleagues.

In the following section, we will describe Vygotsky's theory of concept formation as a potential research tool for semiotic studies that address how internalized meanings develop from highly iconic units to complex relations systems.

3.1. Vygotsky's theory of concept formation

The process of young learners' acquisition of the phenomenon of text in contemporary digital culture can be addressed through Lev Vygotsky's theory of concept formation (Vygotsky 2012: 103-222). Thus, we can consider a text as an abstract concept, a complex system of meaning which can be learned, memorized, and applied in diverse cognitive, creative, or educational tasks.

According to Vygotsky's experimental findings (Vygotsky 2012: 103-222), every concept undergoes a specific development course. In Vygotsky's theory of concept formation, concepts are essentially meanings of words (Miller 2014: 28). One of the outcomes of Vygotsky's empirical studies was his argument that meanings do not act as static units but are dynamic systems that can develop (Vygotsky 2012: 225).

The concept formation process may undergo several stages of meaning development, whose outcome is not always clear to the researcher. However, as described by Vygotsky, the general tendency of concept formation involves moving from the meaning based on one's own experiences and representations of specific objects or phenomena toward complex systems of meaning, possessing a higher degree of generalization, abstraction, and symbolic mediation. In semiotic terms, it is a movement from highly iconic relations toward more complex symbolic relations. A simple example taken from Vygotsky concerns how young children and adults use a similar concept, such as the concept of a 'flower.' The main difference is represented in the system of relations, therefore "[f]or an adult it refers to an abstract concept designating a class of plants, whereas for a child it may name a particular object in the garden or may refer to anything growing out of the ground" (Miller 2014: 30). The different uses of the same concept and its iconic-symbolic relations may be due to both ontogenetic reasons and educational interventions.

Concepts, as meanings, have a primarily cultural origin and can be learned differently. Margot Berger adds that "in a concept, the bonds between the parts of an idea and between different ideas are logical and the ideas form part of a socially-accepted system of hierarchical knowledge" (2005: 158). The theory of concept formation is especially valuable for semiotic studies as it draws the attention of scientists to the way

one internalizes and acquires a meaning of a particular phenomenon, a part of using signs which often remain hidden from semiotic research. During his studies, described in the well-known *Thought and Language* (2012), Vygotsky experimentally demonstrated that the meanings one acquires from culture could develop. This allowed Vygotsky “to overcome the postulate of constancy and unchangeableness of word meaning” (1987: 245), widespread in science at the time of his research.

Vygotsky (2012) distinguishes between several stages of concept formation. First, he describes how conceptual thinking evolves in the course of psychological and cognitive development, which corresponds to “different structures or kinds of generalization” (Miller 2014: 33). This includes pre-conceptual thinking, thinking in complexes, and the development of potential concepts. Secondly, the theory provides us with the main types of concepts, including spontaneous (everyday) concepts, pseudo-concepts, and scientific (or real) concepts corresponding to the different stages of meaning development.

Vygotsky distinguished *spontaneous concepts*, in his terms *everyday concepts*, as those acquired spontaneously by young learners and not introduced as a coherent system of relations within the course of education or pedagogical interventions (Vygotsky 2012: 155-221). These concepts rely on one’s experience (including the perceptual one), informal learning practices and communication with others. This type of concept is more dominant among young children, but some of them also remain in adulthood. When a child encounters a particular phenomenon or a word in different contexts and situations, they begin to identify various characteristics that are inherent for the given phenomenon and keep remembering such regularities (Kikas 2010: 114). As a result, the meaning of a particular phenomenon is formed through a series of encounters with it in either the perceptual world (senses) or through mediated experience (communication, reading, etc.), spontaneous concept “is saturated with experience” (Vygotsky 2012: 204). However, due to the unsystematic introduction of the phenomenon the identification of these regularities may not always be conscious, which leads to the situations when the “explanations may vary in time and by topic” (Kikas 2010: 116) and thus keep the spontaneous concepts to be very limited with the young learner’s own experience. As Vygotsky pointed out “[t]he development of spontaneous concepts knows no systematicity and goes from the phenomena upward toward generalizations” (2012: 157).

While *scientific concepts*¹ normally develop from spontaneous concepts, their nature is significantly different. According to Vygotsky, “[t]he development of a scientific concept, on the other hand, usually begins with its verbal definition and

¹ The notion “scientific concept” does not have any connection with scientific definitions, but is used in the article in this form, as it was used in Vygotsky’s original research “Thought and language” (2012).

its use in nonspontaneous operations — with working on the concept itself” (Vygotsky 2012: 204) and “[by] being applied systematically, gradually comes down to concrete phenomena” (ibid: 157). Thus, not only the scientific concept itself, but also its introduction relies on symbolic means, which is a significant difference in terms of learning processes. Scientific concepts develop in the course of explicit instruction (Miller 2014: 33) and thus “benefit from the systematicity of instruction and cooperation” (Vygotsky 2012: 157) that leads to the conscious acquisition of meaning in the comparison to the spontaneous one in everyday concepts. Scientific concepts are also semiotically different from spontaneous concepts. As a result of relational verbal meanings, “the information [in scientific concepts] is coded and organized in sign systems (mainly in spoken language)” (Kikas 2010: 114). In other words, scientific concepts “are mediated by symbols” (Kikas 2010: 116).

It is also possible to distinguish between an intermediate form of concepts called *pseudo-concepts*.² These concepts represent the type of meaning structures “which externally seem as scientific concepts (words heard from adults) but are in essence everyday concepts” (Kikas 2010: 117). Pseudo-concepts represent “the generalization formed in the child’s mind, although phenotypically resembling the adult concept, is psychologically very different from the concept proper” (Vygotsky 2012: 127). While this type of concept is only a foundation for the further conceptual development, it provides a significant perspective for pedagogical approaches. Pseudo-concepts may either serve as a foundation for the formation of real concepts, or form what is called a synthetic concept or synthetic explanation, which represent “concepts, modified and constructed based on experience” (Kikas 2010: 117) and which may continue to “exist even after children have learnt scientific knowledge in school” (ibid.: 126).

Eve Kikas, in her empirical study (2010) on the way children form concepts of clouds, rain and rainbow, illustrates these different types of concepts. In this study, children were asked several questions in order to identify the meanings they developed about various phenomena during their own experiences and school education. Thus, the examples of spontaneous concepts of clouds included the understanding of clouds to be ‘smoke,’ ‘foam,’ or even ‘cotton wool’ and ‘marshmallow’ (Kikas 2010: 121-122). Kikas identified that among synthetic explanations, “clouds were identified with rain, which means that the children have possibly heard that rain comes from clouds,” or also “made of mist” (Kikas 2010: 122). As regards synthetic concepts, Kikas pointed out that “children make analogies with perceptible phenomena and modify verbally heard information, or they do not provide the whole necessary information” (2010: 122).

² In Vygotsky’s works the notion is spelled as “pseudoconcept,” in our work we are using the spelling of the notion inherent to the contemporary research.

3.2. From an everyday to a scientific concept of text

The elaborated differentiations of various stages of concept formation and development of meaning, provided in Vygotsky's theory of concept formation, can serve as a useful methodological tool for the semiotic research of the acquisition of meanings and learning about complex abstract phenomena. This allows semiotic research methodologies to look at meaning-making as a dynamic process and a process of constantly changing structures in the context of learning and psychological development. One of the applications of the theory of concept formation can be the study of learning diverse cultural phenomena.

Acquisition of the concept of the text is a necessary step for a contemporary learner to be able to access, analyze and share information in the context of digital culture. The development of a concept of text can potentially be a key to the young learners' development of many necessary skills and competencies that originate from the role of a digital text in contemporary culture. Thus, a valuable approach to developing learning and teaching practices is to understand better how learners acquire the concept of the text in digital culture and how they can develop it from an everyday to a real concept.

The phenomenon of text in contemporary digital culture represents a complex abstract concept. This makes it a concept that is very difficult (if possible) to learn within individual perception and experience, i.e., via spontaneous learning. Since having a symbolic nature, learning the concept of the text presupposes almost exclusively symbolic mediation. Lev Vygotsky described mediated learning as a form of learning that conveys knowledge via various signs or sign systems (Fadeev 2019; Kozulin et al. 2003: 15-38) rather than via direct experience and interaction with an object. During human cultural-historical development, symbolic mediation became the dominant way of learning, memorizing, and functioning of other higher psychological functions (Ivanov 2014; Kozulin et al. 2003). Since such abstract concepts as text always presuppose mediated learning, any educational intervention must consider whether signs and sign systems that are involved in the mediation are also available for a learner. The specific semiotic nature of the concept of the text and its ability to be mediated via an almost limitless number of sign systems makes it a unique symbolic mediator, the acquisition of which "enable[s] the explaining of the world in a more integrated manner, allowing for new predictions" (Kikas 2010: 116).

Mediated learning involves not only purely symbolic mediation but also mediation through communication, namely "human mediation" (Kozulin et al. 2003: 19). Thus, learning the concept of the text happens as a result of active interaction with others, such as peers, teachers, parents, who themselves "conceptualise meanings" (Kikas 2010: 116) and present them to a learner in "a ready-made" form. According to Vygotsky, verbal communication is "able to predetermine the path of the development of generalizations and its final point - a fully formed concept" (Vygotsky 2012: 129).

However, the weak side of verbal mediation is that it cannot guarantee the formation of a real concept due to the impossibility of conveying the structures of thinking (ibid.). Thus, learning and teaching the concept of the text presupposes significant challenges for contemporary educational practices.

Spontaneous concepts that confront a deficit of conscious and volitional control find this control in the zone of proximal development, in the cooperation of the child with adults. That is why it is essential first to bring spontaneous concepts up to a certain level of development that would guarantee that the scientific concepts are actually just above the spontaneous ones. (Vygotsky 2012: 206)

The value of acquiring the concept of the text in contemporary culture and developing it to the level of a real concept originates from the two main aspects. First of all, it is the role of text in cultural communication processes that makes acquiring the concept of the text a necessary step in accessing knowledge mediated via various forms of texts in contemporary culture. Secondly, developing scientific concepts of diverse phenomena from educational and developmental perspectives is valuable. As Vygotsky argued, “[t]he strength of scientific concepts lies in their conscious and deliberate character” (Vygotsky 2012: 206), while the main difficulty that relates to the spontaneous concept “lies in the child’s inability to use these concepts freely and voluntarily and to form abstractions” (ibid.: 157-158).

Acquisition of any scientific concept does not happen in isolation from previously learned knowledge. This is another aspect of the concept formation process, where Vygotsky’s theory provides additional input. Vygotsky’s cultural-historical theory argues that the development of the next stage in the formation of a concept relies on the previous stage, utilizing a previously established system of knowledge. According to Kikas, learners’ previously gained knowledge also “affects how they interpret the new information” (2010: 116). As a result, the development of scientific concepts contributes to the development of different structures of thinking and cognitive development in general, which Vygotsky compared with “the effect of learning a foreign language, a process that is conscious and deliberate from the start” (Vygotsky 2012: 206).

Establishing the correlations with previously learned information can be especially important when dealing with the concept of the text in digital culture, considering the amount of experience young learners receive about various aspects of digital texts in the context of informal learning. This also works as a reverse process when mastering a particular concept influences the concept formation of other phenomena by “giving new meanings to perceptible phenomena” (Kikas 2010: 114). This can potentially be very relevant to the concept of the text due to being one of the most essential

elements of cultural communication processes and one of the key mediators of knowledge in education. Thus, acquiring the concept of the text can serve as a foundation of meaning structures for learning about other cultural phenomena.

The role of previously learned information represents why the development of pseudo-concepts features so much importance from the perspective of learning and teaching. According to Vygotsky, pseudo-concepts represent one of the earliest forms of concepts that young learners develop and “which externally seem as scientific concepts (words heard from adults) but are in essence everyday concepts.” Pseudo-concepts represent a necessary step in concept formation due to young learners’ inability to spontaneously acquire complex meaning structures, namely real concepts, conveyed via human or symbolic mediation, “[t]he lines along which a complex develops are predetermined by the meaning a given word already has in the language of adults” (Vygotsky 2012: 128). At the same time, the pseudo-concept provides a crucial pedagogical perspective as it “enables children to communicate effectively with adults and that this communication (the intermental aspect) is necessary for the transformation of the complex into a genuine concept (the intramental aspect) for the learner” (Berger 2005: 159). The main problem with pseudo-concepts is that while being similar to real concepts in their form, they are still explained through everyday experience. In the lack of pedagogical interventions aimed to establish the necessary conditions for young learners “for conceptualising the new information or when they lack necessary tools (knowledge or skills) for creating relations, pseudo-concepts develop into synthetic concepts (i.e., concepts, modified and constructed based on experience)” (Kikas 2019: 117).

Given the diversity of digital and printed texts that young learners deal with daily, as well as the representations of the concept of the text in the limited terms of literary education at secondary schools, we may suggest that the main focus of contemporary educational interventions concerning the development of the scientific concept of text in digital culture should be on supporting the further development of already established pseudo-concepts of text among young learners.

Considering Vygotsky’s cultural-historical theory and the understanding of the concept of the text within the semiotics of culture, we can formulate the following aspects regarding learning the concept of the text in digital culture:

1. The concept of the text represents a complex abstract concept that can be acquired as a symbolic psychological tool providing young learners with access to knowledge mediated in digital culture via diverse types of texts. Mastering the concept of the text gives learners more flexibility in accessing, analyzing, and sharing knowledge.

2. Learners do not develop the concept of the text simultaneously, as concept formation always undergoes specific stages of development (described in Vygotsky’s research). As with any other concept, it takes time to proceed from pre-conceptual

thinking toward what we can call a scientific concept. Therefore, forming the pseudo-concept of text and the symbolic mediators available to a young learner deserve specific attention in educational practices.

3. The key to successfully acquiring a text as a complex concept and a potential psychological tool is to build connections with the young learners' previous knowledge, e.g., their experiential knowledge, informal learning practices, and structured pedagogical interventions.

4. Recent studies (e.g., Kikas 2010; Berger 2005) demonstrated that it is also essential to find a variety of tasks and possibilities in teaching and representing the concept. Thus, finding "different possibilities for interpreting the phenomenon" (Kikas 2010: 125) is necessary. In literary education, the text is typically perceived as merely printed materials (or at least their digitized versions). This establishes a narrow understanding of the phenomenon and does not provide the necessary resources for acquiring the scientific concept of text as a psychological tool necessary for accessing knowledge in digital culture.

5. According to Vygotsky, the essence of the concept formation is (a) focusing attention; (b) selecting distinctive features; (c) analysis and synthesis: "it is a functional use of the word, or any other sign, as means of focusing one's attention, selecting distinctive features and analyzing and synthesizing them, that plays a central role in concept formation" (Vygotsky 2012: 114).

6. Another aspect of acquiring any concept in general and the concept of the text, particularly, is the social and cultural context in which the concept is acquired. Since this is where the meaning originates, and thus "social world determines the ways concepts need to develop" (Berger 2005: 156).

7. The essence of a successful acquisition of any concept is its context and practical application, no matter at what stage of development a particular concept is. In other words, "for learning, not only internalising but also externalising process is of importance" (Kikas 2010: 117).

4. Conclusions

The purpose of the given study was to identify the processes underlying the acquisition of the concept of the text in digital culture and to introduce Lev Vygotsky's theory of concept formation as a valuable methodological tool for contemporary semiotic studies in researching learning, memorizing, and meaning-making.

The study has shown that the phenomenon of text represents a crucial symbolic mediator in contemporary digital culture. The evolution of digital culture has enriched the possibilities for the representation of texts and for enhancing the possibilities for metatextual multiplicity, emphasizing the educational dimension of the concept of the

text. The role of text as a source of learning and educational device originates from the functions of text, which include conveying information and meaning generation, as well as from its developmental role as (one of the most advanced) potential psychological tool. As a result, acquiring the concept of the text provides young learners access to knowledge mediated via diverse forms of texts incorporating various sign systems.

In this study, we proposed the methodological foundations for incorporating Lev Vygotsky's theory of concept formation as an analytical tool for researching the processes of meaning-making, i.e., concept formation, learning, and memorizing. As a result, Lev Vygotsky's approach to studying higher psychological processes allowed us to look at the semiotic processes from a different perspective. In other words, we can look at the internalized signs not only through their levels of relations and complexity of signification but also, we can look at them in dynamics as a process of gradual change and development.

The study presented here attempted to set the ground for describing the processes behind acquiring the concept of the text in contemporary digital culture. The concept of the text is related to a complex abstract cultural phenomenon, which is difficult to acquire through direct experience and interaction with an object. Thus, learning mainly occurs in a mediated form, including symbolic and human mediation.

The symbolic nature of the phenomenon of text as well as learners' diverse experience with various forms of texts, especially the digital ones, in contemporary popular culture, requires researchers and educators to focus specifically on the variety of synthetic concepts aroused in the formation of the concept of the text among young learners.

Considering the findings both of Vygotsky and of recent research (e.g., Kikas 2010; Berger 2005), the educational practices addressing the development of the concepts of text need to focus on its functional uses, the analysis, and synthesis of its distinctive features, the cultural and social contexts of its possible application, as well as the externalization and explicit practice of its use as a concept. Further empirical research is required to identify the specific explanations related to the different stages of the formation of the concept of the text in digital culture, as well as to explore semiotics' potential to contribute to the educational practices aimed at supporting the learning of the concept of the text in digital culture.

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