Mechanisms of knowledge translation in the conditions of modern culture digitalization

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Abstract. This article deals with the problem of digitalization of cultural mechanisms of knowledge translation. The study clarifies the terms digitization and digitalization, considers their comparison, as well as differences from digital technologies. In addition, the positive and negative consequences of these processes on society as a whole are considered. Since a modern person prefers to receive information in a finished form, therefore, digitalization is of great importance. The history of the emergence of digitalization as a separate process is also considered. Now most areas of our lives increase technological involvement, that has led to a large-scale convergence of various areas and processes. The article examines the influence of convergence on the processes of social and political integration at the level of interaction between groups, associations of individuals in the implementation of civil initiatives, as well as at the level of states and peoples. Digitalization processes have significantly changed the world and human interaction. Key words: digitalization, digitization, technology, culture, concept.

1 Introduction

The given article is devoted to the problem of digitalization of cultural mechanisms of knowledge translation. Developing the topic, the authors start from the two terms in modern science: digitization and digitalization. The meaning of the terms does not allow considering them as synonyms, however, the processes defined should be interpreted as interrelated. The authors of the article do not claim to give a comprehensive character sketch of the modern digital society and a complete description of all the aspects of culture development preconditioned by digitalization. The perspective of consideration in this text is defined in the focus of knowledge accumulation and the procedures of its translation in society. The purpose of the article is to demonstrate the conflicts to appear that are identified as the digitalization processes expand.

Grounding their provisions with reference to contemporary researchers and representatives of humanitarian school of thought the authors endeavoured to point out positive consequences of digitalization, including democratization of communication and creativity, as well as annihilation of physical distance between actors in the process of

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communication and joint projects realization. That naturally leads to economy of resources in the process of knowledge translation and upgrade of cultural and educational environment accessibility level. But the authors are concerned by the fact that digitalization of knowledge translation mechanisms contains serious risks, firstly, for conservation of mere knowledge value, secondly, for retaining the traditional model of teacher-student interaction (person-to-person).

2 Materials and methods

The term digitalization originates from the essay by Robert Wachal (published in 1971) in the analysis of social consequences computer distribution in the society [1]. Since that time scientific discussions have focused on the issue of mechanisms and consequences of digital impact on various spheres of social life and on processes of formation of digital media-infrastructure. Digitalization processes start with the growth of globalization and the transformation of society into an “informational” (or digital) one. Since the last third of the previous century the whole social infrastructure has started changing influenced by communication networks [2]. All the spheres of the social life, including economy, culture, politics, education, have undergone great transformation.

Some researchers believe that the process of digitalization has given rise to a new type of society – “network society” [3], where network social communities and global digital communication infrastructure are most closely connected. The liberal sciences have initiated a heated discussion on what ought to be considered as the basic unit of the network society: “network” [3], “individuals” [2], and “network individuals” [4]. In this regard the researchers are rather cautious about the issue of whether digitalization and network society are mutually complementive phenomena. There exists a viewpoint, according to which the network society is formed by means of mutual shaping processes occurring between the social structure and communicational technologies [2]. In accordance with a different approach, social and technical actors mutually complement one another as technology implies society, and society cannot be understood or described without its technological tools [3].

It is necessary to differentiate two different terms: digitization and digitalization. Digitization, alias digitizing, is the process of converting information from analog to digital format, which allows you to store large amounts of data, work with information on a computer, and generally simplify operations and minimize certain errors. Digitalization is a system of processes that determine reformatting of modern culture and processes caused by the Fourth (Digital) Scientific Revolution. The beginning of the Digital revolution was laid in the last decades of the previous century as part of the Third Revolution, called the Information Revolution. The roots of the latter go back to the middle of the 20th century, and one of the first to analyze the processes of influence of digital mass communications on society and culture was Herbert Marshall McLuhan.

3 Results and discussions

McLuhan's most important work is “The Gutenberg Galaxy: The Making of Typographic Man”. Here the researcher describes the principles of the influence of information technologies on culture. Before the alphabet evolved, a person used mainly the auditory channel of communication, the world in this period was known intuitively. The creation of the alphabet, according to McLuhan, led to dramatic changes in social organization and forms of thinking, as a result it started modernization of ancient communities. The appearance of writing mediated and determined the exit of the cave man from the sacred world into the secular society [5].
The next stage in the development of society was creation of a printing press in the New times, under the influence of which a person changed the focus of their perception from hearing to sight, due to which they began to perceive things and words linearly. This served as an almost complete shutdown of all channels of sensory perception, with the exception of the visual one. The society has moved to a new stage of development: a traditional person has transformed into an industrial person. Typographic technology made it possible to study the world individually and contributed to separation of people that brought about mass production and an atomized society, as a result.

In fact, McLuhan, through the development of technology, describes the birth of a new interpretation of culture. Technology allows human sensations to materialize, which leads to a new ratio of feelings in culture [5]. The quintessence of the discovery of this stage is the book as a carrier of verbal symbols organized in an exactly reproducible order. McLuhan calls the printed text both the first mass-production commodity and the first reproducible product [5]. Moreover, the book appears as a kind of technical device that projects a person's thoughts. Thus, the multi-page linear text was born.

The next wave of technology development that led to a change in society was the telegraph and the radio [5]. When the television appeared, man again gave preference to vision and visual images. The researcher believes that the development of electronic communication has gradually led to the construction of the world in the image of a “global village” [5]. It stands to reason that the next era should be the birth of the Internet, which laid the foundations for the creation of a unified communication infrastructure, established global connections between regions and human communities that are radically distant from one another, but in close proximity due to the Network through the gadget interface.

Thus, an ordinary person traditionally cognized the world and built social connections intuitively, while the main channel of perception was hearing, and information was stored in small volumes and transmitted orally; then, having created the alphabet, a human being learned to read and, accordingly, store information in a voluminous text; then he improved the carriers and translators of information, learned how to store information in huge volumes, and also radically increased the speed of operating information and upgraded the technologies of its processing. Now information can be listened to, read, watched at the same time, and it can be broadcast, regardless of distance. It must be admitted that computer technology has radically changed man and society as a whole, similarly to the role mechanization played for the Industrial revolution [6].

The expansion of digital technology use has laid the foundation for a large-scale convergence of various areas and processes, i.e., at present we can talk about unification of technical devices, such as radio, media, telephone, which were previously presented in various physical ways, but now all these can be functions of the same gadget [7]. The convergence influenced the processes of social and political integration at the level of interaction between groups and associations of individuals, as well as at the public and national levels. Modern digital technologies have also changed communication at the interpersonal level: despite the distance and language barriers, people got the opportunity to exchange messages, develop joint projects, and provide financial assistance to one another. Thus, digitalization has significantly changed the world and human interaction.

However, in addition to positive processes, digitalization has created problem areas in social activities [8]. Thus, digitalization has become a serious challenge for the production and translation of knowledge. The emergence of social networks and platforms like Wikipedia is characterized by completely new forms of production and dissemination of knowledge and cultural artifacts. Now anyone can work with information, create new knowledge and cultural products, and access to such production has become open, and democratized. At present, a person who writes poetry, for example, can not only join functioning virtual groups of poets, offering their work to the judgment of connoisseurs and...
amateurs, but also independently create a personal website, public, where, with certain marketing steps, they can collect comments and likes, stir up interest to themselves and their art.

Back in 1935, Walter Benjamin, speaking about text creation, pointed out that technological progress in the future could destroy the privileged, elite nature of creativity, making it possible for actually anyone to become an author. [9]. Today, almost a century later, the Web is seen to be flooded with the results of creative searches of newly-minted poets, composers, photographers, videographers, and commentators, etc. The number of visual images on the Internet is especially striking.

The authors have to admit that on the wave of a radical speed increase digitalization contributed to the victory of the visual over the text. A modern person prefers to receive information in a capacious, reduced, and ready-made form. On the one hand, a visual image saves time and effort on perception, but on the other hand, focusing on visual images threatens with a decline in functional literacy: people stop reading analytical texts, conducting a comparative analysis of various viewpoints, and generally make it difficult to work with a large amount of text signs and characters. As a result, a mature personality is threatened by loss of competence to create a coherent text.

The younger generation have found themselves in an even more serious situation: under the influence of the Net, textual competence may fail to be formed at all. The transformation of text from horizontal to vertical format, fragmentation of the narrative by visual images, the availability of works in a contracted form, the availability of ready-made answers to standard tasks on the Web – all these activities often result in the process of knowledge assimilation turning into the consumption of information obtained fragmentarily and effortlessly.

This creates a risk for society to sooner or later face a young generation who have difficulty not only creating large coherent texts, but also perceiving and analyzing voluminous sign systems. The digitization of educational material, the widespread use of electronic educational resources during the pandemic made the above-mentioned problem even more acute, especially for the Alpha Generation, a generation that has completely been living their life in the context of digital technologies and cannot exist without gadgets.

However, in the problem under consideration, one more variable should be taken into account – the digital economy itself. In this regard, there should be mentioned the work by Y. Benkler “The Wealth of Networks: How Social Production Transforms Markets and Freedom” [10], where the author says that for the first time in history one can observe “hierarchically equal production” (social production) on a global scale. Due to rapidly declining costs of production and dissemination of digital information, hierarchically equal production is beginning to outst other market mechanisms for the production of knowledge and cultural values. The rise of digital media has proven inexpensive to create and distribute everything from digital movies shot with smartphones to political commentary on blogs. This is especially true for the production systems and distribution processes of industrial giant structures, such as Hollywood movie studios or major newspaper printing houses.

Benkler reckons that in the production of cultural and intellectual goods, people no longer need either direct market incentives or indirect market subsidies, such as protection of intellectual property rights. Instead, people want to create and distribute digital goods, ostensibly out of pure creativity or goodwill. When brought together through digital platforms, a great amount of individual contributions to knowledge production, such as Wikipedia or culture in general, can become very important on their own. Benkler argues that these new non-market and cooperative forms of labor create economic value that increasingly competes with separate states and traditionally functioning bureaucracies. He believes that the majority of these new forms of cultural and knowledge production operate as if outside the normal realm of formal governance structures.
Now, in his opinion, work is motivated by the interests, values and time of those, who can easily seek and implement projects that meet their own personal limitations and time resources, and it is aimed at deriving psychological and social satisfaction. In a broader sense, Benkler’s argument is that digital communications mark the beginning of an era in which this new kind of work seriously challenges traditional information production in the fields ranging from professional journalism to academic publishing.

Collaborating on large-scale projects, individuals receive psychological satisfaction in the course of joint activities and teamwork, namely the feeling of pleasure from creative activity, the opportunity to take part in creative projects, new emotional experience, i.e. the engines of the production process in a digital society. It should be recognized that people really began to look for like-minded people to create and implement new intellectual products and creative projects, regardless of the partners’ geographic location, while traditional material incentives can sometimes move over to the background. However, here we are faced with the same consequences that W. Benjamin wrote about in the first third of the 20th century: indeed, the number of people involved in cultural production in the broadest sense is increasing sharply, the inhabitants are gaining access to processes in which they had not previously tried themselves, and geographic location is no longer an insurmountable problem, but new questions have arisen. Digitalization led to the democratization of culture, but at the same time brought to life the following phenomena: a) demotivation in labor activity associated with routine work, low wages, especially at the initial stages of professional activity; b) the desire to work creatively as bloggers for popularity and high income; c) online provision of mere intermediary services with good fees; d) development of risky unstable temporary forms of employment, etc.

One should not truly identify the digitalization of cultural mechanisms of the transmission of cultural products and knowledge exclusively with the spread of the Internet, because not so much the Internet as the growth of specialized, private digital networks plays a leading role in shaping the digital system of culture and the digital educational ecosystem of society. Today each organization has a page on social networks, its own website, and in this regard, organizations and structures consider it their duty not only to notify users about their activities, but also to draw attention to themselves through various competitions and grants.

At the same time, users are often attracted by the opportunity to gain experience through projects, master new competencies and form new social ties. It is impossible to ignore the educational platforms that offer how to quickly and relatively inexpensively get a popular, fashionable profession, while the study schedule and the content of educational products can be adjusted to the consumer. To the point, these platforms sometimes not only issue certificates and diplomas to their listeners, but offer to resolve issues of further, post-graduate support and employment.

Thus, the phenomenon of “hierarchically equal production” for society is fraught with certain threats: firstly, of the development and expansion of uncontrolled, but rapidly developing market of non-formal education, and secondly, of the devaluation of knowledge as such, i.e., knowledge obtained by systemic, heavy, hard work. Not systematic, but situational knowledge; not fundamental, but specific knowledge; currently-in-demand practical skills, short Internet courses, but not long-term, stationary immersion in the educational process; not face-to-face communication, but communication mediated by a gadget – this is far from a complete set of binary characteristics that reflect the features of the learning process in the analog and digital eras, but this set already allows us to understand how great the differences are in the personality formats of different periods of human history.
Fig. 1. Accompanying cultural changes with education, recognition and representation [11].

4 Conclusion

Summing up, it should be noted that digital communication actually produces a reconfiguration of the space-time continuum, including counteraction to rationalization, standardization and bureaucratization of society. Radically transforming the entire landscape of mass communications, digitization, which should be viewed mostly positively, has become a ubiquitous phenomenon. However, it was digitization that led to the transformation of the “person-to-person” learning model into the “person-gadget-person” model, where communication between the student and the teacher/educator became indirect. The digitization process determined the unprecedented importance of material information carriers, technical objects, gradually replacing the book with a gadget, and the linear multi-page text with a reduced one. At the same time, the processes of knowledge translation in the educational system are considered in the general context of the digital economy development.

The concept of “digitalization” today is defined as interdisciplinary one, meaningfully it is defined as a system of processes in which digital means of communication and digital media infrastructure plan, shape and influence the modern world. By facilitating a large-scale convergence of uncoordinated spheres, digitalization is able to create a simulating and consolidating environment not only for all other media, but also for technical objects and cultural manifestations. Scientists are divided in their opinions whether digitalization should be positioned as a way to more effectively organize the interaction of society or as a destabilizing force. Speaking of hierarchically equal production, it is worth noting the positive impact of digitalization on liberalization of various aspects of life, but there are also a sufficient number of negative consequences for the culture and knowledge production system. On the one hand, digitalization leads to mitigation and reduction of the communicative distance, the accessibility and democratization of numerous cultural processes, on the other hand, it is accompanied by the decline in the quality of cultural products and the devaluation of basic values.

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