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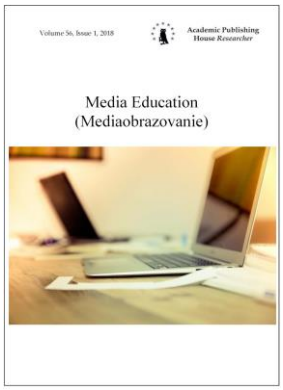

Aspects of the Generational Theory Application in Terms of Digital Education Development in Russia

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Abstract

Under conditions of postindustrial transition and formation of the information- and knowledge-based society and economy, an important role is played by the digital sector of economy, with technologies being increasingly used in the educational process. In this regard, development of digital education is becoming one of the most important strategic tasks for development of Russia, its society and economy, as well as direction for provision of the country's national and economic security. In this connection, one of the promising development paths for digital education in Russia is suggested to be in the form of implementation of distance learning forms into the system of higher education, as well as transition of lectures from classrooms into the digital space, which, the authors believe, will improve the quality of higher education and promote students' digital literacy. However, during introduction of such reforms in the Russian system of education, it is necessary to take into account the generational specificity of students currently enrolled in higher education programs and of those coming to the marketplace of educational services in the nearest years, that is generations Y and Z, having almost inborn digital literacy, but finding real world communication difficult. Based on conducted research, the authors of the given article provide a number of recommendations on the choice of directions to be used in the process of education for generations Y and Z.

Keywords: generational theory, digital economy, digital education, distance education forms, digital literacy, digital intelligence.

1. Introduction

The current global tendency of development of the real economy, spheres of exchange and consumption is that of the fundamental changes determined by the trends of postindustrial transition and formation of information society, associated with shift in focus from the production of material goods on intangible assets. These tendencies are most apparent both in economy of the leading countries, where information and knowledge are turning into the major driving force of production, and in the sphere of international economic relations, a traditional battleground for struggles over resources, that is for wealth and power.

The processes taking place in developed countries' economies indicate that "the postindustrial transition is carried out in the form of a quantum leap, a revolution in production forces, and is leading to emergence of a new technological mode of production. Its attributes are

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informational transformation of economic resources and forms of wealth, globalization and environmentalization of economic activity, qualitative increase in the human factor effort in the reproductive system. Science and industry are drawn together and fuse, knowledge economy is formed, and imaginative nature of work is increased" (Eletsky, 2000: 83-84).

The objective basis for the new quality of economic growth, development of social sphere, science and education appeared due to emergence of fundamentally new information and communication technologies, in particular, the Internet, which contributed to formation of the global cyberspace. Under conditions of postindustrialization, information in the form of personalized knowledge becomes the fundamental basis for the new type of society. Having its own independent value, information appears as a commodity, resource (factor of production), competitive advantage and a means of competition at the same time (Ignatova, 2007: 147). In this context, the saying "Knowledge is Power" loses its hyperbole nature and can be understood literally.

Development of information processes in different economic sectors has resulted in separation of an independent segment – the so called digital economy with such attributes as e-commerce, internet-banking, cryptocurrencies, etc. In this regard, the urgent task ensuring Russia's economic safety and competitiveness is to move to economic growth of a new quality, based on development of digital economy and modern information and communication technologies (ICT).

One of these development priorities is education, which, under postindustrialization conditions, is regarded as a life-long ongoing process. A rapid increase in the areas of ICT implementation, their rapid penetration into all spheres of human life and professional activities require higher media or, in other words, digital literacy rates among population, which can be achieved by means of ICT training at almost all levels of education – from pre-school education to the system of further professional and post-graduate education. In our point of view, the problems and tasks of digital education development in Russia should be classified in accordance with specific characteristics of representatives of different generations, which vary from one another, among other things, in different levels of digital literacy. In this context, when working out strategic vectors for digital education development in Russia, it seems relevant to rely on the main principles of the generational theory adapted to Russian realities, as well as on the available experience of its application.

2. Materials and methods

Before analyzing peculiarities of information technologies awareness among representatives of different generational groups in the context of achieving greater digital literacy in Russia, it is necessary to refer to the basic principles of the generational theory.

The generational theory is a relatively young area of research, which appeared in the early 1990s at the interface among several sciences: economics, economic psychology, history, as well as cultural and political studies. Until recently, it has not been attributed to any of the sciences mentioned, however, it has not become an independent field of study either. The founders of this theory are considered to be two American scholars: a historian Neil Howe and an economist William Strauss, who published their book "The Fourth Turning" in 1991. While studying the 20-year cycles of American economy development in the 20th century, the authors revealed certain regularities in behavior and life strategies of people belonging to different social groups, but born over the same time spans, that is united within the frames of one generation. In the scholars' point of view, the classic generation gap is not connected with the conflict of ages, in which case, after reaching a particular age, all individuals would acquire a particular system of values and behavior strategies. However, this does not happen: when children reach their parents' age, they realize models of behavior different from the ones of their parents' or grandparents'.

In Howe and Strauss's opinion, the reason for this lies in the fact that at different points in time, under the influence of different economic, political, social and cultural factors (i.e. public events, which affect the life of a nation and individuals), representatives of different generations form different values. In this context, a value is understood as significance of phenomena and real-world objects from the point of view of their correspondence or noncorrespondence to the needs of society, social groups and individuals (Howe, Strauss, 1997: 38). The system of basic values is formed in childhood, as a rule, up to the age of 12-14 years, when the child does not yet give moral assessment to public events happening around him, but is still learning to live under certain

conditions. During this time, subconscious underlying values are rooted in the individual, most of which are imperceptible, but later whole generations base their lives and activities on such values. Thus, representatives of a generation, which had survived famine or hard war time, tend to be more economical and careful towards food and clothes, they tend to save up for a rainy day, be content with little, whereas a generation, whose basic values were formed under conditions of relative social-economic stability, implements success-oriented life techniques (focus on perspective, ambitiousness, leadership). The gradually accumulated "database" starts forming the personality.

The generational theory application in Russia has its own specific character, explained by a slight shift of time boundaries of certain age groups representatives' attribution to a particular generation, as compared to its western counterpart, as well as by identification of the object of research. In the Strauss-Howe generational theory the object of research is the middle class with a high level of income, which enables its representatives to spend substantial amounts of money on education, nutrition, travelling, cultural life. However, in Russia, attribution of this or that group to the middle class depends on what is chosen as the criteria of the class – level of income or level of education – so, it is not that obvious. Thus, at least two groups of Russians can be described as the middle class now: people with high incomes and people with a high level of education, who, as a rule, in Russia, belong to the category of "the working poor", which is paradoxical in the western point of view. Due to this fact, the object of research for the generational theory adapted to Russian realities is the so called "popular majority".

Classification of generations, based on the Strauss-Howe theory adapted to Russian realities by the Russian scholars Evgenia Shamis and Alexey Antipov with regard to the basic values formed by public events at a certain period, is presented in Table 1 (Shamis, Antipov, 2016: 44-45).

Table 1. Adapted Russian version of the Strauss-Howe classification of generations

GI generation General Item or Heroes	Generation P Pensioners or Silent	BB Generation Baby Boomers	Generation X Xers Nomads, "Children with a key around their necks"	Generation Y Millennials, Next, Yers	Generation Z Indigo children, Alpha
1900-1923	1923-1943	1943-1963	1963-1983	1983-2003	2003-2023
Autumn	Winter	Spring	Summer	Autumn	Winter
Events					
1905 Revolution, the Great October Socialist Revolution, the civil war, war communism, collectivization, electrification	Stalin's purges, the Great Patriotic War, reconstruction of the war-torn country	Baby boom, human space flight, the Khrushchev "Thaw", the Cold War, the USSR is the global superpower	Continuation of the cold war, the bipolar world, war in Afghanistan, the Chernobyl disaster, queues and food coupons, Perestroika	The collapse of the USSR, market transformation, "the turbulent 90s", terrorist attacks, military conflicts, 1998 economic crisis, development of Internet technologies, brands	The global financial crisis, 2009-2010 economic crisis in Russia, formation of the new multipolar world, sanctions, born in the digital age

Basic values					
Hard work, responsibility, faith in the better future, commitment to communist ideology, opinionatedness	Commitment, following the rules, respect for position and status, self-sacrifice, patience, obedience, thrift	Idealism, optimism, youth, health, collectivism, team-orientation, personal growth, involvement, personal compensation	Choice, global information awareness, individualism, continuous training and education, pragmatism, "time is money", hope for oneself	Changes, optimism, pleasure, life "here and now", interesting job, immediate compensation, naiveté, technical professionalism	The system of values is still being formed, early digital literacy, problems with communication and socialization

At the time boundary between generations, their shift is taking place gradually and depends on the individual's place of residence. In particular, in capitals, metropolitan cities, port cities, and other places, where growth of international business, trade and migration flows promote active development of cross-cultural interaction, this process is happening faster. People born at the meeting point of generations fall into a transitional or the so called echo-generation. They have the values of both generational groups.

3. Discussion

Under postindustrial transition, the way and forms of communication undergo drastic transformations; that is the most clearly manifested by the fact that the traditional ways of communication are replaced by the virtual digital technologies and they create a new frame of the modern society existence. According to the «Intel» founder Gordon Moore due to the speed the computer technologies are developing, computer "intelligence" doubled every six months. Further development of this trend will result in the fact that by 2030 the computer productivity will have corresponded to the human brain productivity and will overtake it in the length of time. Digital technologies penetration into the everyday life of the society and their ambiguous consequences are in the centre of the scientific discussion and are interested for the scientists from different spheres of scientific knowledge.

According to J. McDougall and J. Potter under present conditions information and communication field defines fundamentally new social and cultural situation of the social development. The formation of a "new human being" whose presence in the physical world is often replaced by his/her presence in the information world is taking place and is greatly influenced by the digital content, and it in its turn causes changes in the behavior of all members of the society (McDougall, Potter, 2015).

According to G. Reid and S.P. Norris Internet has not only become a search tool, but a hi-tech means of everyday communication in the modern society as well, and the cyberspace is a "habitat" for the growing digital generation, so-called digital aborigines, whose values are mostly determined by digital technology development, globalization processes, mobility and integration into the Worldwide Web (Reid, Norris, 2016). The Russian scientist N.A. Slyadneva shares this opinion and notices that "our contemporary obtained the possibility to comprehend the world on-line and participate interactively in the cultural genesis process, identifying the strategemas of their social activity, self-realization in accordance to the information as multi-faceted as it has never been before" (Slyadneva, 2015:2).

In the modern world an avalanche of the information content, that is often impossible to be comprehended and processed, falls on a human being. That is why one of the basic competencies of a contemporary person is an ability to think critically and assess the information obtained through digital channels. The development of digital literacy of the population, which includes not only the ability to work with large information flows and to think critically , but also the ability to work with semantic and mythological systems, interpret, evaluate and verify information, becomes an urgent task.

Y.S. Zubov (Zubov, 1994), E.P. Semenyuk (Semenyuk, 1994), A.I. Rakitov (Rakitov, 1993) did researches of these issues as long ago as in the early 1990-s and foresaw and forecasted the information culture potential in the society. Y.S. Zubov in the early 1990-s paid special attention to

the information research and its impact on the processes of socialization and integration based on the social and cultural role of the information and communication processes and emphasized the importance of the competence approach while working with the information flows. He noted the significance of a human being as an object and a subject of the information development able to work out the new forms of the social behavior under changing environment (Zubov, 1994). Zubov's ideas became the basis of the separate branch to research the cultural processes of the social development – information cultural studies.

In this context H. Jenkins's concept is significant, and it is formulated as a system of knowledge and skills which guarantees person's qualitative position in the information environment and is based on working out abilities and skills to interact correctly with visual content in the world with constantly updating technologies (Jenkins, 2006). The researcher believes it is necessary to interact correctly in the private-public internet space.

A. Lisenkova considers these principles as an ecological approach to interact in the digital world which unites several trends, necessary skills and competences including digital consumption and digital safety together with the development of new forms and deviations directly connected with net technologies development such as trolling, flaming, cyber bulling, etc. (Lisenkova, 2017: 88-91). The issues related to the safety in the cyber space were researched by such authors as I. Ramos-Soler, S. Lopez-Sanchez and T. Torrecillas-Lakav (Ramos-Soler et al., 2018), V. Leiva and A. Freire (Leiva, Freire, 2017), D. Gillmor researched these aspects in journalism (Gillmor, 2016) and by A. Fedorov (Fedorov, 2015), A. Teplyashina, V. Golubev, N. Pavlushkina (Teplyashina et al., 2018), E. Bidova (Bidova, 2012), etc.

Digitalization of the economy, the development of media education, the formation of the all-Russian unified electronic educational space are becoming the prior objectives of the social and economic development of Russia in the nearest prospect in accordance with a number of the strategically significant state program (Vinogradova et al., 2018: 9). R. Suleimanov defines it as a platform resulted from the set of the organizational and technical measures to provide electronic environment for the full educational process and possibility to have an access from any place on the planet (Suleimanov, 2018). To meet this objective it is necessary to solve a number of tasks to create the conditions for the digital literacy, these tasks are to provide systematic approach to form the united educational space in Russia based on the modern technologies, to implement the united platform of the Russian educational space able to distribute and control over electronic educational content use; to work out methods and algorithms of the dynamic adaptation of the educational process in accordance with the individual peculiarities of the students, to provide the access to the protected Russian electronic educational environment from any place on the planet for anybody concerned, etc.

A.G. Bespalova and A.V. Kuznetzova see the digital literacy formation for the economically active population one of the basic trends of their goal (Bespalova, Kuznetzova, 2018: 11-21). In general the concept "literacy" can be understood as a certain degree of mastery of basic cognitive skills such as calculation, reading and writing in one's native tongue. Digital literacy in the postindustrial economy goes beyond this definition, because nowadays it correlates with both information and scientific literacy. L. Kiyanova and I. Litvinenko understand the digital literacy in a broad sense as an ability to create and use the content through digital technologies, including computer programming skills, searching and exchange the information, communication with other people (Kiyanova, Litvinenko, 2013: 53). According to a well-known digital technology consultant Douglas (Doug) Belshaw the digital literacy modern model comprises eight compulsory elements (Fig. 1).

We stress that these eight elements of digital literacy are compulsory for all economically active generations; therefore, every modern person has to possess these skills or strive to acquire them. Let us look closely at certain more significant elements of this list.

Digital citizenship and related digital confidentiality and critical attitude towards media information represent the basis for the individuals' safe and efficient time spent in the virtual world. Despite the fact that the basics of computer literacy and digital business are taught at schools and higher educational institutions more and more often, the issues of digital citizenship and digital security often remain outside curricula, even though these skills must be taught as soon as the child gets access to his/her first electronic device. The question of the day is who and how should educate the growing generation on this matter, if adults, i.e. parents and teachers, belong to non-digital generations, lack familiarity with digital technologies and cannot provide their children with the necessary skills. Consequently, younger children, as well as teenagers, are exposed to

cyber-risk (gadget-addiction, cyberbullying, suicidal or terroristic sites, etc.). In many cases, virtual reality becomes the source of information about deviant forms of behavior for members of the rising generation, which hinders real-world communication.

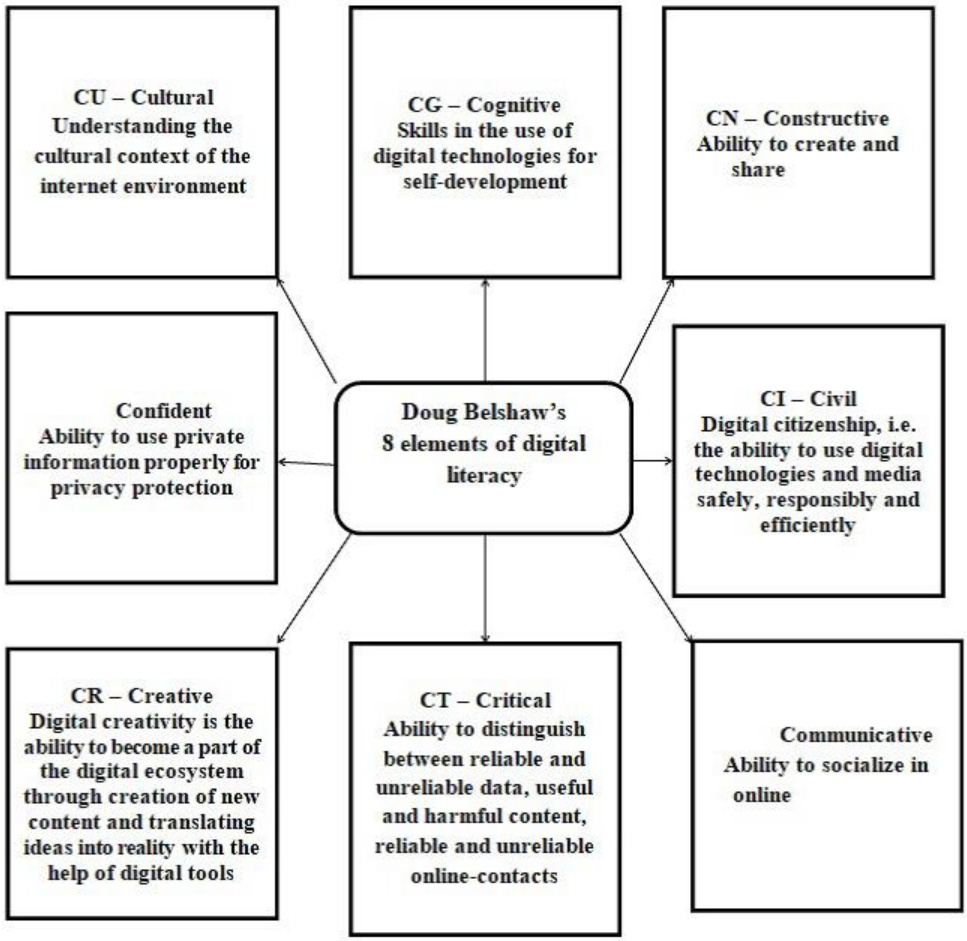

Fig.1. Doug Belshav's digital literacy model

One of the suggested ways to raise digital literacy of the Russian population is a radical transformation of the traditional training forms used by universities, which includes replacement of classroom activities with online and offline teacher/student work as part of distance methods of media education. For example, according to Y.I. Kuzminov, Rector of Higher School of Economics, HSE abandons lecturing completely, with lectures being replaced with electronic online-courses. He states that only 15-17% of students attend lectures in Russian higher educational institutions. Digitalization of courses should encourage students to be more involved in the process of education, take some load off professors' shoulders and generally increase the quality of university education. Y. Kuzminov also made it clear that implementation of online-courses into the Russian educational system may "be not only voluntary" (Kuzminov, 2018: 5).

In our opinion, before practical realization of this initiative as either an experiment or a possible reform of the higher education in Russia, it is necessary to consider its different aspects, including the generational theory perspective.

4. Results

Currently, Russia is inhabited by representatives of the following generations: Silent generation (born in 1923-1943), Baby-Boomers (1943-1963), generation X (1963-1983), Millennials or generation Y (1983-2003), generation Z (2003-2023). The most economically active are primarily the representatives of generations X and Y, whereas more and more Baby-Boomers are retiring, and their economic activity is decreasing due to low pension incomes. This is what

distinguishes Russian Baby-Boomers from western representatives of this generation, who remain economically active even after retirement. Generation Z representatives attend schools and are preparing to become consumers at the market of educational services provided by colleges and universities. Thus, the main participants of digitalization in secondary general, secondary technical and higher education are Zers and younger Yers.

The boundary between generations X and Y (i.e. the moment in time when a large group of people starts behaving in a way different from the previous one) is quite distinguishable; however, the boundary between Millennials and generation Z is blurred in time and can be defined with a great degree of conditionality. Moreover, some scholars point out existence of subgeneration Alpha as part of generation Z (children born after 2010), which is different from earlier Zers in a greater degree of independence. Nevertheless, a common characteristic feature of the whole generation Z is the "inborn technological literacy". If development of Yers' system of values coincided with development of Internet-technologies in Russia, Zers have never lived in the "pre-digital epoch", so they cannot imagine a different world. Generation Z perceives the Internet as a natural environment, and the ability to work with mediatechnologies as an everyday practice, they have handled digital devices since their childhood like professionals.

Studying the values of generation Z has led to appearance of new terms – DQ (Digital Intelligence), Digital Native – generation Z itself, natives of the digital technologies world, and Digital Immigrants, that is their parents Xers and older Yers (Fukolova, 2014).

Characteristic psychological peculiarities of generation Z, roughly categorized as positive and problematic, are presented in Table 2.

Table 2. Psychological characteristics of generation Z

Positive	Problematic
Rapid development, giftedness	Mosaic thinking
Multitasking (texting, listening to music, playing a computer game, doing homework)	Bad memory (the information in question can always be looked up on the Internet)
Ability to work with any kind of information, rapid involvement into the information in question	Attention deficit hyperactivity disorder (ADHD), restlessness, impatience
Immediate result orientation	Infantilism
	Introversion, tendency towards autism
	Hypermotivity
	Low communication skills

As noted above, representatives of generation Z perceive digital technologies as a part of everyday reality they are perfectly adapted to. Zers know digital technologies so well, that they do not need to be taught digital literacy; they cannot imagine how someone can be unaware of something, which is so self-evident to them. On the contrary, they could teach digital communication to representatives of other generations. However, there's the other side of the coin: prosperity and abundance of opportunities make Zers moody, partially deprive them of ability to make efforts to achieve goals, solve problems, compromise, and deepen their fear of failure.

There appeared another name for generation Z – "Diaper Generation": unlike any previous generation, since their infancy Zers don't have to do anything to stay dry. Psychologists note that this fact greatly influences their further behavior as they grow older. In particular, games and play activities demonstrate preschoolers' and younger schoolchildren's difficulties in social communication: as soon as the game reaches the point when participants have to reach an agreement, children leave the game. It can be assumed that Zers' inadequate understanding of intricate human communication in real, and not virtual, life, their reluctance to find common ground with other people could result in problems when starting a family, inability to work in a team, including teams with representatives of other generations. In economists and sociologists' point of view, Zers' isolation will deepen due to other factors, in particular, urbanization. Rapid growth and technological advancement of cities, especially in capital regions, will lead to further weakness of the province, resulting in a greater gap and a more complicated social communication between the representatives of generation Z living in cities and villages, in capitals and provincial municipalities.

As for generation Y, whose younger representatives could also become participants of the higher education reformation processes connected with its transition into cyberspace, the situation here is rather controversial as well. Yers' characteristic feature is their reluctance to enter into commitments of adult life because of the negative example of the previous generation (their parents got married early, divorced early, started to work early). Yers tend to postpone their transition to adulthood for a longer period compared to their age-mates in previous generations. They are called the "Peter Pan Generation" – Yers behave like they are going to live forever, remaining in the state of eternal youth or extended childhood.

Younger Yers, current students and older schoolchildren, are similar to Zers in having the same sheltered life and overprotection when they were growing up: they have always had food, play toys, money. "Yers are used to having all their wishes fulfilled, they are idealistic and even impractical, but the most disappointing thing for Xers is that Yers are poorly adapted in today's world" (Shamis: 2009). Because of this infantilism, Yers often find it difficult to realize their own potential, that is why they need an experienced mentor. Due to this reason, coaching techniques are getting so popular nowadays. Interaction between Yers and older generations, which takes place when they are in immediate contact, in particular, in the academic environment – in the university lecture hall, during practical lessons, help representatives of different generations develop each other: Xers and Baby-Boomers bring Yers "down to earth", and Yers show older generations how to live here and now.

Yers students' attitude towards introduction of distance digital education forms into academic practice is controversial. In 2016-2018 the authors conducted polls among 1st-4th year students of two universities in Rostov-on-Don: Southern University (IMBL) and Rostov State University of Economics (RINH). The students' fields of education were: Economics, Management, Law, State and municipal management, and programs of studies: Economic security and Forensic enquiry. The students were offered to answer questions about their values, acceptable and inacceptable behavior models, and to point out the most efficient forms of studying considering opportunities of getting knowledge and applying it in practice. 300 students of intramural and extra-mural forms of studies took part in the poll. Selected results of the study are presented in Fig. 2 and 3.

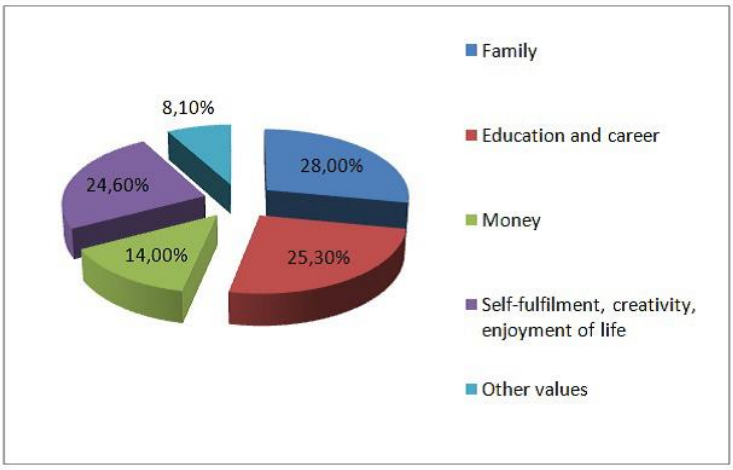

Fig. 2. Values of generation Y according to the results of opinion poll among students

As the diagram in Fig. 2 shows, the main value for the majority of students is Family (84 people, or 28 %, primarily women). However, a similar amount of respondents point out Education and career as their priority value (correspondingly 76 people, or 25.3 %) and enjoyment of life, which the respondents attribute to the opportunity of self-development, self-fulfillment, including creative activity (74 people, or 24.6 %). In this context, the respondents mention, the opportunities for self-fulfillment are determined by both the individual's personal qualities, aptitudes, talents and quality of the received education. Money as the primary value was put forward by 42 students (14 % of the respondents), who stress that all other goals can be achieved only with a solid material base. Finally, other values (fame, popularity in the Internet community,

as well as personal health) were set as basic by 24 people, or 8.1 % of the respondents. Thus, in general, about a half of the respondents define a high level of education as the basic value for their generation directly or indirectly.

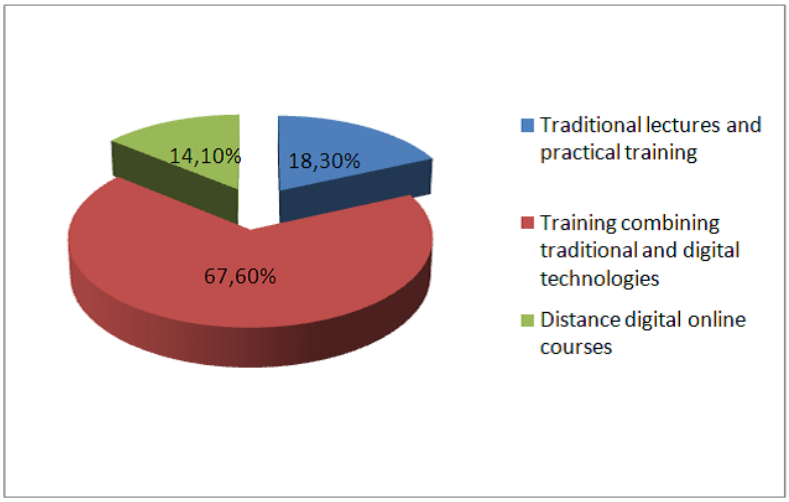

Fig. 3. Generation Y's estimation of different training forms efficiency according to the results of opinion poll among students

As Fig. 3 shows, the majority of students believe that traditional training forms such as lectures and practical lessons, where lecture information is repeated, are outdated. Only 55 people (18.3 % of the respondents) consider that traditional forms of learning should be preserved. The majority of students point out that the hardest form of studying for them is a lecture, "as one has to be writing much and quickly", they find it difficult to stay concentrated on the learning material for over twenty minutes ("we are writing unthinking, not understanding the point of what is being explained").

However, even fewer students (42 people, or 14.4 %) are ready to take part in distance learning online. More often these technologies are accepted by students of the extramural form of study, but even they mark that in many cases, they can find answers to the questions they have only with their teachers in the classroom or with their coursemates during real-life communication. The comments to their answers often included an opinion that recorded video lectures uploaded to the electronic information educational environment of the university are not interesting for students, who are unlikely to use them during preparation for examinations or practical lessons, so distance learning will turn into a purely formal process and even profanation not giving any knowledge necessary for professional activity and career progress.

Nevertheless, a vast majority of the respondents (203 people, 67.6 %) point out that the most efficient training form is the combination of traditional and interactive technologies, suggesting a short lecture with notes to be written by students, and consolidation of the covered material through discussions, business and role-play games, trainings, project work with the help of media technologies. Mosaic thinking requires frequent and quick switching of activities during the lesson, which helps keep students interested and concentrated.

It may therefore be concluded that a possible transition of educational process into cyberspace will be ineffective both for generation Z, perfectly adapted to virtual reality, but lacking real-world socialization, and for generation Y, who being familiar with digital technologies, on the one hand wants to receive real knowledge useful for later recruitment and promotion, and on the other – wishes to see education as an engrossing creative process, providing an opportunity to enjoy realization of their own potential. In this context, the task for teachers is to form such skills of working in the information environment in the young generation, which Yers and Zers lack due to their poorer life experience and misunderstanding of some dangers posed by the virtual reality. The skills which are to be formed in every user by digital education (or digital skills) are presented in Table 3.

In our opinion, distant forms of digital education are more acceptable for generation X doing further retraining and vocational rehabilitation in the framework of continuous education.

Table 3. Necessary digital skills to be formed by digital education

o	Skill	Content
.	Digital-personality	Ability to create and maintain healthy individuality both in virtual world and offline.
.	Management of time spent in front of the screen	Ability to manage time in front of the screen, cope with multitasking, develop self-control to prevent internet-addiction.
.	Resistance to cyberbullying	Ability to identify signs of cyberbullying and respond properly.
.	Cybersecurity	Ability to protect one's own data with safe passwords, neutralize various cyberattacks.
.	Private life protection	Ability to manage one's own private information online with the aim of private life protection.
.	Digital traces	Ability to understand the origin of digital traces (e-mails, texts, messages in blogs, tweets, photos, comments to Youtube videos, likes on Facebook, as well as traffic statistics, web search history, data on the movement of people and on phone calls) and consequences of their retrieval in real life, responsible attitude towards them.
.	Digital-empathy	Ability to empathize with individuals' needs and feelings expressed online.

Fulfillment of tasks of digital education development for contemporary student body – Yers, transitional echo-generation and the following Zers and Alphas can be carried out in the following ways:

- equipping classrooms with modern gadgets, usage of e-books and e-textbooks;
- individual approach to every student;
- encouragement of collaboration and mutual support among students;
- using of innovative educational technologies, business and role-play games, trainings for unification of the team and joint decision-making;
- introduction of computer games (simulators, quests, etc.) into the training process, project work;
- introduction of coaching as an academic subject to teach goal-setting and achievement of the set goals and tasks;
- involvement of practicing experts who have reached success in a certain professional field into the educational process.

Thus, digital literacy and digital education in general should aim at training a person to control the "information noise", make understanding of digital reality easier, and turn interaction with digital technologies into a source of development, not stress.

5. Conclusion

Every generation has its own area of freedom, some sort of "personal space", which is inaccessible for representatives of other age groups. For example, Baby-Boomers, the parents of today's Xers, found this area of freedom in rock music – something that adults could not control or understand, because they could not "feel" it thoroughly. Contemporary Yers and Zers see this area in virtual reality and the Internet, which are more or less "terra incognita" for other generations.

With enhancement of Internet-economy it is very important not to destroy, but, on the contrary, to intensify interaction between generations in the digital environment. Development of internet-commerce and electronic funds transfers puts forward tasks of teaching digital literacy primarily for those generations, who are less familiar with this environment, namely Baby-Boomers and Xers. This can be taught only by their children and grandchildren – Yers and Zers. In their turn, rich life experience, knowledge and wisdom of elder generations can help generations Y and Z acquire the basics of information security, develop skills of conscious time spending in the virtual reality, and most importantly, they will help the "children of the digital world" not to get lost and not to feel like they are "uninvited guests" in the real world.

A range of other important issues should be taken into consideration as well. According to calculations, the years 2015-2025 will face a significantly lower educational capacity of the working population in Russia due to retirement of the relatively numerous post-war generation with a rather high level of education and coming into the working age of children born during the years of reforms (1990-2000), who are by far less in number (almost two times) than the previous generations (Mavropulo, Muryukina, 2018: 98-99). Within 10 years (2007-2016) educational capacity of economically active population fell approximately by 160 mln man-years, that is by at least 20%. These losses can turn out even more serious if we take into consideration the quality of modern education. Under these circumstances, full transition of educational process into the digital environment will deepen the gap between the generations coexisting in one timespan on the one hand, and worsen rather than improve the quality of education on the other hand.

According to D. Belshaw, there is no single correct strategy of proper digital behavior, a single form of digital literacy, which could be imposed on everyone. Directions, methods and techniques of acquiring this literacy vary depending on cultural circumstances, social contexts and users' age.

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