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Value Basis of Social Identity in the Consciousness of Youth from Multiethnic Regions: the Case of the North Caucasus

Evgenij A. Avdeev* and Sergej M. Vorob'ev
The North-Caucasus Federal University
Stavropol, Russian Federation

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Abstract. The article is devoted to determining the impact of traditional and modern values on the identity of the North Caucasus youth and detecting the risks arising during its transformations. The quantitative survey found that the value field underlying the young people's identity comprises both modern and traditional attitudes. For the youth of the Caucasian peoples, a number of traditional values and ethnic patterns are of greater importance than for ethnic Russians. In general, all-Russian self-awareness is important for the majority of young people, regardless of ethnicity. Common narratives prevail in their understanding of fundamental norms and values. At the same time, ethnic and regional-republican identities also play an important role. There is a difference in identity priorities between ethnically Russian and Caucasian youth. Distinctions in the importance of traditional and modern values, ethnic and regional identity can become a trigger for conflicts. Risks of ethnic entrepreneurship, irrationalization of conflicts through the use of defensive rhetoric in relation to language, ethnocultural values and group identities remain in this region. Slow pace of socio-economic development, diminishing role of the State in social life will lead to reducing all-Russian identity. Belonging to the Russian state, identification with the country, a common understanding of fundamental norms and values remain the main unifying factors. Their erosion in the context of globalization and universalization of the value system increases the risks of politicization of ethnicity, disintegration and destabilization of the North Caucasus.

Keywords: youth, traditional values, modern values, identity, the North Caucasus, ethnic identity, national-state identity

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* Corresponding author E-mail address: ewg.avdeev@yandex.ru

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Ценностные основания социальной идентичности в сознании молодежи полиэтничных регионов: на примере Северного Кавказа

Е.А. Авдеев, С.М. Воробьев
Северо-Кавказский федеральный университет
Российская Федерация, Ставрополь

Аннотация. Статья посвящена определению влияния традиционных и современных ценностей на содержание идентичности молодежи Северного Кавказа и выявлению рисков, возникающих в процессе ее трансформаций. Результаты количественного исследования показали, что ценностное поле, лежащее в основе идентичности молодых людей, составляют как современные, так и традиционные установки. Для молодежи кавказских народов ряд традиционных ценностей и этнических паттернов имеет большее значение, чем для этнических русских. В целом общероссийское самосознание сформировалось и важно для большинства молодых людей независимо от этнической принадлежности. В их понимании основополагающих норм и ценностей преобладают общие нарративы. Существует разница в приоритетах идентичности, традиционных и современных ценностей между русской и кавказской молодежью, что может стать триггером конфликтности. В регионе сохраняются риски этнического антрепренерства, иррационализации конфликтов за счет применения защитной риторики по отношению к языку, этнокультурным ценностям и групповым идентичностям. Низкие темпы социально-экономического развития, уменьшение роли государства в социальной жизни приведут к снижению уровня актуализации российского самосознания. Принадлежность к российскому государству, идентификация со страной, общее понимание основополагающих норм и ценностей остаются основными объединяющими факторами. Их размывание в условиях глобализации и универсализации системы ценностей увеличивает риски политизации этничности, дезинтеграции и дестабилизации Северного Кавказа. В этой связи необходимы дальнейшие усилия по формированию общих ценностно-смысловых основ российского самосознания, образа Родины и моральных норм, поддерживающих доверие и социальную солидарность в полиэтничных молодежных сообществах.

Ключевые слова: молодежь, традиционные ценности, современные ценности, идентичность, Северный Кавказ, этническая идентичность, национально-государственная идентичность.

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Introduction

Modern social transformations and conflicts, the phenomenon of "ethnic revival" and increasing complexity of self-identification processes actualize resort to the category of "identity" for analyzing the complex dynamics of nonlinear transformation processes of social consciousness, values and institutions. Relevant to understanding the value filling and transformations of modern man's identity are the results of research project World Value Survey (WVS) (R. Inglehart and Ch. Welzel). WVS reflect the respondents' assessments on a variety of issues related to attitude towards democracy, tolerance towards foreigners and ethnic minorities, attitude towards gender equality, religion and globalization, attitude towards the environment, work, family, politics, national identity, attitude towards security and subjective well-being[1]. Their studies have shown the evolutionary nature of the values transformation, which triggered by the global processes of modernization in a wide variety of communities (Inglehart, Welzel 2005). At the same time, significant cultural and civilizational differences continue to persist in the modern modernizing world. Research of these processes are extremely important for Russia because of the erosion of previous identities and mainstreaming discussions on the formation of new Russians' identity. Significant contribution to research on the problem of identity and methodological basis of identitarian research belongs to the scientific team of the Primakov National Research Institute of World Economy and International Relations, Russian Academy of Sciences.

A surge politicization of ethnicity in the 1990s, triggering a series of ethno-political conflicts and armed clashes, brought issues of civil consolidation and a common all-Russian identity and values construction in multiethnic regions to the top of the domestic scientific and political agenda. In this period, sociological research is being conducted on the issues of the dynamics of mass consciousness and identity of Russians, the perception of citizens of their country, the formation and value-semantic content of Russian identity. These researches are still ongoing (Gorshkov, Sheregi, 2020; Drobizheva, 2020a; Tishkov, 2019; Iadov, 2014). In contemporary research of Russian identity, understood as belonging to a historical civil nation, a political community consisting of different peoples, V. A. Tishkov and L. M. Drobizheva are in the lead. By analyzing identity issues of modern Russians – citizens of a multiethnic country – M. K. Gorshkov and I. O. Tyurina come to the conclusion that the need for a "synthesis of civil and ethno-national consciousness", including in the basis of the unique experience of survival and socio-cultural creativity of each people of Russia (Gorshkov, Tyurina, 2018: 53). Overall results of the modern all-Russian surveys established that at present, for the overwhelming majority of Russian peoples, the all-Russian identity is a guiding. However, building of a state nation in Russia is not complete. Moreover, it is seriously hampered by the continuing the persisting deep socio-cultural split of Russian society and the difference in the priorities of identities between ethnically Russian and "national" regions of the country.

Statement of the problem

A short history period of the modern Russian state, problems caused by the break-up of the USSR, identity crisis and upsurge of ethnic nationalism actualized the task of forming all-Russian identity on the basis of correlating a citizen with a state-political community, developing civic consciousness and to ensure the continuity of the historical and cultural heritage. In the scientific and public discourse of Russia, there is an understanding of a nation as a civil-political community. The processes of institutional transformations and depoliticizing of ethnicity are continuing, which is reflected in the sphere of national policy. At the same time, identity politics in Russia was ambivalent. Ethnic, along with all-Russian identification, continues to retain their importance for the majority of modern Russians. In the doctrinal space, the competitiveness of the self-designation of the country's citizens and ethnocultural definitions remains (Drobizheva, 2020b). According to V. A. Tishkov, the old Soviet and regional-

[1] World values Survey. Findings and Insights. Inglehart–Welzel Cultural Map. URL: https://www.worldvaluessurvey.org/WVSContents.jsp (accessed 17.07.2021)

ethnic identities were replaced as a priority by the all-Russian self-awareness. In some regions (republics), ethnicity may prevail over the all-Russian (Tishkov, 2019: 411). V. A. Anikin considers that the ideas of statehood are still the constructs of national-state identity. Behind the feeling of "Derzhava" among Russians is a sense of community as representatives of a single whole, the existence of which bases on the unity of views on life, norms and values (Anikin, 2016: 225).

Caucasus is a unique region, combining peoples of different civilizational, ethno-cultural and religious affiliation, compactly living in a relatively small territory. Its specific characteristic is a great, in comparison with the all-Russian level, significance for the population of group, ethno-clan and confessional interests. This actualizes the risks of politicization of ethno-cultural identities and the transfer of conflicts to economic and administrative resources, in which significant groups of the population are involved, in inter-ethnic and inter-confessional conflicts.

Today, multidirectional processes are characterized the North Caucasus. Along with the modernization of all spheres of social life, re-actualization of a number of traditional socio-political institutions and practices, ethnic and clan identities continue to occur. In the region, the problems of modernizing the existing system of socio-political organization of society, transforming established customary illegal and corrupt structures into modern competitive organizations, further implementation of modern digital technologies and management practices shall be mainstreamed. Notwithstanding the continuing huge diversity of ethnic and confessional communities, today the North Caucasus is in many ways a single region, which is characterized by many social, economic and cultural ties between its subjects. In doing so, the specificity of the region makes it a kind of "barometer of the country", because the problems characteristic of Russia as a whole are here could become exponentially more pronounced.

Despite the current socio-political situation is relatively stable, the risks of destabilization and actualization on the part of regional political elites of attempts to revise the political and legal status of its subjects are still present in the region. Further, if negative case scenarios would be occurred, the key role will again pass to the ethnic factor. The destructive potential of ethnization of politics and the politicization of ethnicity, the risk of mobilizing ethnic identity by ethnic entrepreneurs can be balanced by ensuring sustainable socio-economic development of the North Caucasus Federal District of Russia, minimizing the difference in the level of socio-economic development of the North Caucasus and the rest of Russia. Another important point is the further integration of the region into the all-Russian economic and socio-cultural space. In this regard, the shaping of the all-Russian identity, common value system among young people as the basis of social-political consolidation, peace and security in a multiethnic region is becoming one of the state policy priorities.

Theoretical framework

Interest in identity in the scientific community in connection with the rapidly changing ideas about social reality and changes in social interactions. The importance of identitarian research is growing in connection with changes in social needs and development priorities of modern society, the emergence of new values and meanings of human existence. The discourse of transforming identities has become a new mechanism for shaping of modern social reality. The change in identity in the portfolio of an individual's social identities becomes one of the markers of the ongoing socio-political transformations and denotes his involvement in these processes. Modern socio-political research is aimed at studying the complex of foundations of the portfolio of identities, which includes values (spiritual guidelines and moral ground of a human), emotional and rationally motivated components connecting both individual and collective slices of social experience. According to I. S. Semenenko, to capture the status and at the same time to reflect the dynamics of a person's ideas about his place in the world and about his "I" befell the concept of identity (Semenenko, 2017: 21). The category "identity" allowed expanding the research field of political studies, connecting different

levels of social interaction from small social groups to large communities (professional, ethnic and national-state), various sections of political consciousness and political activity. This makes it possible to overcome the systemic limitations of political-institutional analysis, to expand knowledge about the nature of political communications, symbolic politics and network forms of political interaction (Malinova, 2015).

In considering the socio-cultural foundations of youth identity, we proceed from the fact that the process of self-identification of a young person with the community in which he exists is based on the assimilation of already established socio-cultural patterns, norms, rules and values, which is the key to entering the communication space of a particular community. Thus, the social interaction is an indispensable condition for the formation of identity. Because the individual in the process of social interaction is included in various communities (ethnocultural, religious, professional, etc.) and relates himself to a multitude of reference groups, he is characterized by a plurality of identities (Goffman, 1959). The comprehension of the self-identification phenomenon is possible through the determination of the nature and specifics of the interaction between individuals and social groups, in the process of which one defines oneself thru belonging to a group of their own kind (Social Identity…, 1982; Turner, 1987). Along with the growing diversity of identities, modern society is also characterized by "mixed" identity, the phenomenon of conflict of various identification bases in the identity portfolio.

The range of opportunities for self-identification due to the pluralization of values and meanings increases in a post-traditional society. This repeatedly confronts the modern person challenges for self-identification problem and immerses him in a situation of constant choice of life path (Giddens, 1991). The information revolution and the development of digital technologies, the crisis of the world economic system, and the emergence of a number of new social and political movements are changing the nature of social interactions. According to M. Castells "networks constitute the new social morphology of our societies, and the diffusion of networking logic substantially modifies the operation and outcomes in processes of production, experience, power, and culture" (Castells, 1996: 500). Identity reflects both the state and the change in public attitudes, and in the process of self-identification, reflection on socio-political practices and political actions takes place. The rapidly changing, individualizing society of "liquid modernity" is characterized by the denial of previous forms of sociality, avoidance of responsibility that erodes family, ethnic and national identity. The formation of the identity in such a society, according to Z. Buman, lacks "patterns, codes and rules to which one could conform, which one could select as stable orientation points and by which one could subsequently let oneself be guided" (Bauman, 2000: 7). At the same time, identity has turned from a given into a problem. It entails the formation of such an individual, "which must be solid enough to be acknowledged as such and yet flexible enough not to bar freedom of future movements in the constantly changing, volatile circumstances" (ibid: 49–50). All this widens the gap between modern "abstract, universal instrumentalism" and "old" identities – formed on the basis of social institutions and values that developed in the industrial era – and leads to the emergence of a whole range of new identities based both on traditional ethnocultural and religious norms, and on new political ideologies (feminism, environmentalism, transhumanism, etc.). Thus, the systems of value, identificational and behavioral attitudes that form the individual's social habitus have lost their former integrity and certainty, having turned into an object of construction both on the part of the individual himself and on the part of various global and local actors of social politics and identity politics. In doing so, changes in the structure of social identity and the transformation of its value components are becoming one of the key factors of social and political shifts.

The value-semantic filled of a young person's identity forms his ideas about his place and role in society, allows him to correlate himself with socially significant cultural markers, determines behavioral models and role func-

tions in society. There is a self-identification of a young person with social institutions and the system of social relations. The most important reference groups of youth self-identification are large social macro groups, such as ethnos, regional, nation and religious community, civilization. The features of the young people's social identity are its incomplete formation, a blur of assessments and perceptions, constant transformations of identity under the influence of the modern information environment. There is a gradual replacement of traditional values with modern ones, which under certain conditions may contain an element of conflict, a rigid hierarchy of preferences is not formed, the value-semantic filled of identity is mainly eclectic in nature. In today's socio-political realities, society and state cease to be synonymous, the role of the nation state decreases, and civic identity loses its former crucial importance. In addition, it expands the role of regional, ethnic and religious identity is growing.

In connection with the transition to an information society, a modern man has wide access to various information materials. Their availability and mass distribution complicate the self-identification of a young person, the identity is fragmented, at the same time, one or the other of its components are actualized. These processes lead to a decrease in the role of social ties, reduce the ability of young people for collective action and solving socially significant tasks. In general, the role of social identity as a resource for socio-political development has been declining.

Today's youth is characterized by a decrease in the importance of political identity, which is based on self-identification with the subjects of the political process, parties and socio-political movements. The political identity of young people is formed in the process of correlating their own ideas about the priorities of the socio-political development of the state, the ideological component of political movements with the existing political realities, the success of the country's political course, the declared goals of political actors. The national-state identity construction serving as a macro-political one based on citizenship, patriotism and the politics of memory remains an important element of the politics of modern states. This identity is based either on a sense of belonging to a nation (defined for various reasons) or to a supranational community (Malinova, 2010).

Information technologies have formed an environment of networked communities that continue the process of identity fragmentation and sharply increase the possibilities of self-presentation in public space. Young people have the opportunity to transcend their local communities, because online communications form a new reality, which little dependent on the usual socio-political institutions and practices. This enables the purposeful use of identity discourses for the political manipulation of youth. Identity politics becomes "soft power" to advance group interests. In the North Caucasus, there are still risks of actualizing ethnic clan, confessional, radical and separatist groups formed in the network space.

Hybrid identities that combine in varying degrees traditional and modern values are characteristic of young people's self-identification in multi-ethnic regions. In that regard, identity politics in the regions aimed at developing of a common understanding of all-Russian identity for representatives of various ethnic, religious and sociocultural communities becomes an instrument for sustainable social communication and formation of the structure of identity based on the priority of state-civil component. Thus, in polyethnic regions, all-Russian identity presupposes a focus on national-state content. Russian political scientists in the construct of national-state identity include the diversity of national-ethnic groups living on the territory of the country, and the perception of the Motherland image, and not just the state with its formal institutional features (Popova, 2020: 99).

Methods

We used the methods of sociological survey, quantitative, qualitative and comparative analysis. A quantitative study – a sociological survey – made it possible to examination the value-symbolic content of youth identity by determining their assessments and ideas in this area, measure the variables reflecting ethnic, confessional, regional, socio-cultural and civil-

political components of identity and identify its ethnic group differentiations. Based on the data of empirical research, the authors summarize and analyze the value-semantic foundations of self-identification of the North Caucasus youth. Distinction between young people of Russian nationality and representatives of the peoples of the Caucasus in the priorities of identity are fixed.

The empirical basis of this article was formed by the results of a sociological survey. The objects of the survey were students aged 18–24 from leading universities in the North Caucasus. The sample included about 60 per cent of Russians by ethnicity and 40 per cent of representatives of the Caucasus peoples, 44 per cent of the boys and 56 per cent of the girls. The sample size is 1027 respondents. The survey was conducted in March and April 2021 online. Questions and test items were generated using cloud-based tools. The survey instruments, in addition to the indicators aimed at determining the significance of the main traditional and modern values for the respondents, included indicators of all-Russian, regional, ethnic and religious identity. The use of modern information technologies made it possible to make the survey procedure more accessible to young people and to expand the geography of the study.

Discussion

National-state, ethnic, confessional, regional identities are shaped through interaction, strengthening social relationships. On this basis a community spirit is formed. In the future, new ideas and views are established within societies and transform the traditionally understood patterns. A wide palette of identities characterizes the North Caucasus young people: national-state, ethnic, regional-republican and, confessional. They are in dynamic interaction. The most significant issues are the compatibility of these identities, the priority for young people of all-Russian self-awareness, the search for historical and cultural ideas that unite all peoples and form the multinational Russian people. The region can implement various models for the development of these identities: from competition and conflict to a harmonious combination based on shared values and sociocultural basis. Important components of national-state identity are young people's ideas about the common history of the existence of peoples within the framework of the common State and socio-cultural values, which are shared by the majority of the population. The consciousness of the North Caucasus youth combines both the memory of forcible annexation, conflicts and deportations, as well as respect for the culture, customs and traditions of mountain peoples on the part of the Russian state, its contribution to the socio-cultural and socio-economic development of the region.

Through the development of a common culture, values, views on life and the memory of the historical past, youth are also shaped ideas about national and state interests, love for their country and loyalty to the Russian state. For the majority of young people surveyed, a number of traditional Russian values continue to be significant, such as respect for work, a strong state, patriotism, and a traditional family. A minority of the respondents indicated the importance of the religious and collectivist values. At the same time, for representatives of the Caucasian people, the value of traditional family, religion and collectivism is higher than for ethnic Russians (see Fig. 1).

Also, modern values, such as democracy and human rights, freedom of self-expression, political freedom and individual autonomy, tolerance, individualism and minority rights play an important role in the value-semantic filling of the identity of the youth of the region (see Fig. 2).

It can be assumed that modern values become decisive for certain groups of urban youth, while traditional values are the most significant for rural youth. On that basis, the strengthening of value divisions can lead to the formation of a conflict environment and open conflicts between certain groups of young people. This is confirmed by the respondents' opinion, most of them pointed to the possibility of conflicts among young people sharing traditional and modern values.

Paternalism as one of the historically important characteristic features of the Russians

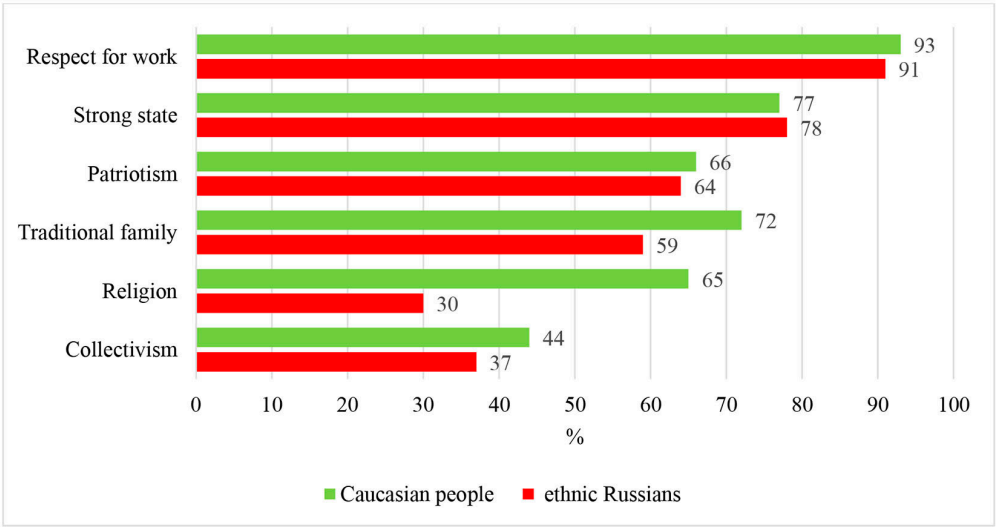

Fig. 1. The proportions of respondents' replies to the question "Are the following traditional values important to you?" *(North Caucasus Federal District, March-April 2021. N=1027, % of the number of respondents, replies by criterion "Important")*

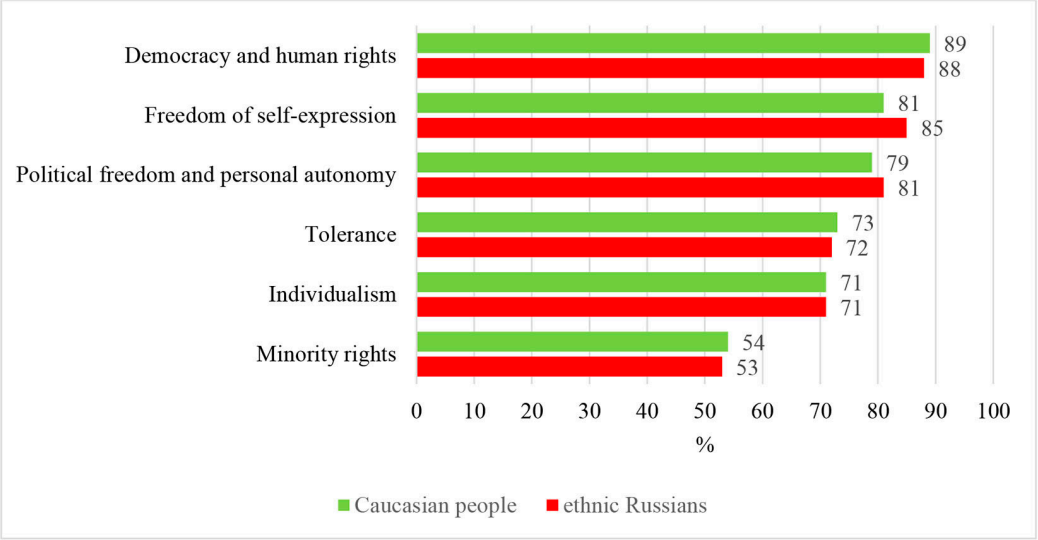

Fig. 2. The proportions of respondents' replies to the question "Are the following contemporary values important to you?" (North Caucasus Federal District, March-April 2021. N=1027, % of the number of respondents, replies by criterion "Important")

identity, formed over centuries, is losing relevance for the region's youth, regardless of ethnicity. Thus, only 32 per cent of respondents believe that the authorities should provide for the needs of citizens, and citizens should allow the authorities to regulate all aspects of their lives. It can be assumed that these young people want to act and lead their lives independently. They do not count on the assistance by the State. This is confirmed by the respondents' opinion. Virtually all of them point to the importance to be free and independently make decisions

about their lives. In addition, a characteristic feature that determines the young people's life trajectory is an individualism, which manifests itself in the priority for the majority of individual success, recognition and well-being over the success and well-being of their people, and the greatness of the Motherland.

The research indicated that a number of traditional foundations of ethnic identity for the youth from the Caucasus peoples are important. Thus, 74 per cent of respondents who identify themselves as the Caucasian people pointed out the importance of following national customs and traditions (see Fig. 3). It can be assumed that the value and cultural foundations of the traditional national identity of the ethnically Russian youth are being erased. At the heart of the value-symbolic content of the identity of Russian youth, modern values and civic attitudes begin to prevail. At the same time, their importance is also growing for Caucasian youth, who are also immersed in a common information environment.

In the understanding of patriotism, most young people combine traditional attitudes (pride in the country and its achievements, protection of its territorial integrity and sovereignty, protection of religious values and beliefs, preservation and development of Russian culture) and modern values (protection of the rights and freedoms of citizens, civil activity). At the same time, the protection of religious values and beliefs has a higher priority for representatives of the peoples of the Caucasus, whereas the preservation and development of Russian culture is more important for ethnically Russian youth (see Fig. 4).

A significant marker of identity is the awareness of young people of their connection, attachment to a particular social community. The most significant thing for the respondents is the awareness of their connection with the closest family members and small motherland. Further important is the emotional connection with the country, people of their nationality and religion. At the same time, for representatives of the Caucasian peoples, the awareness of the connection with people of their nationality and religion is much more significant than for ethnic Russian youth (see Fig. 5). In terms of significance for young people, the importance of awareness of their connection with close social groups (closest family members and small motherland) prevails.

The national-state (all-Russian) identity in the region, perceived as belonging to the Russian state, was shaped among the majority of respondents, regardless of ethnicity. Regional, ethnic and religious identity is much more important for representatives of the peoples of the Caucasus than for Russian youth (see Fig. 6). Significant differences in the priorities of ethnic, regional and religious identity between the Caucasian young people and ethnic Russians carry risks of conflict. This could trigger the transition of domestic conflicts into local interethnic conflicts.

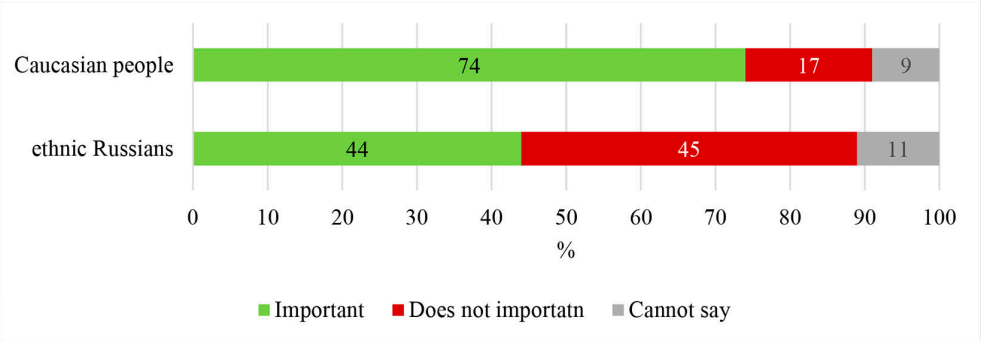

Fig. 3. The proportions of respondents' replies to the question "Is it important for you to follow national customs and traditions?" (North Caucasus Federal District, March-April 2021. N=1027, % of the number of respondents, replies by criterion "Important")

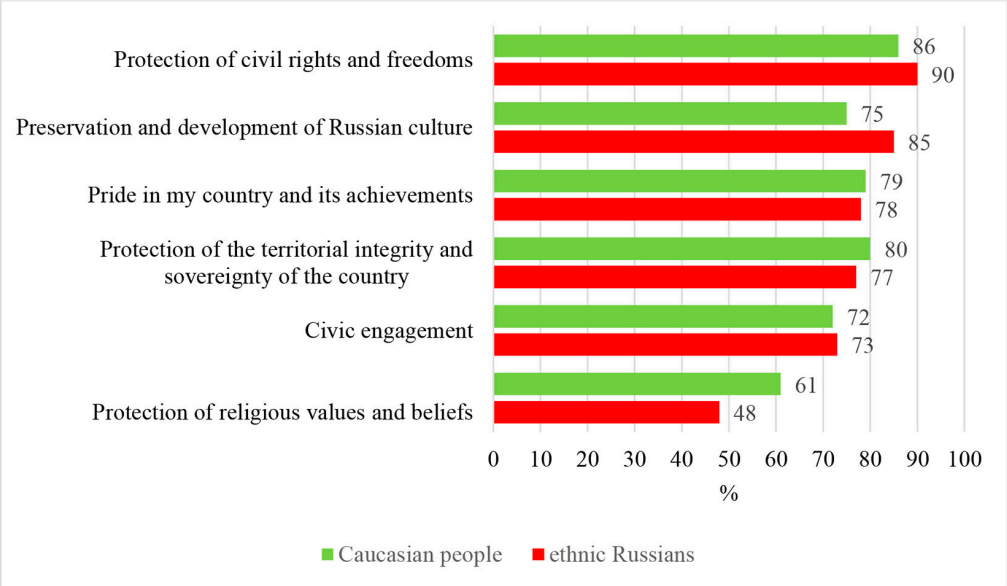

Fig. 4. The proportions of respondents' replies to the question
"What does patriotism mean to you?"
(North Caucasus Federal District, March-April 2021. N=1027,
% of the number of respondents, replies by criterion "Important")

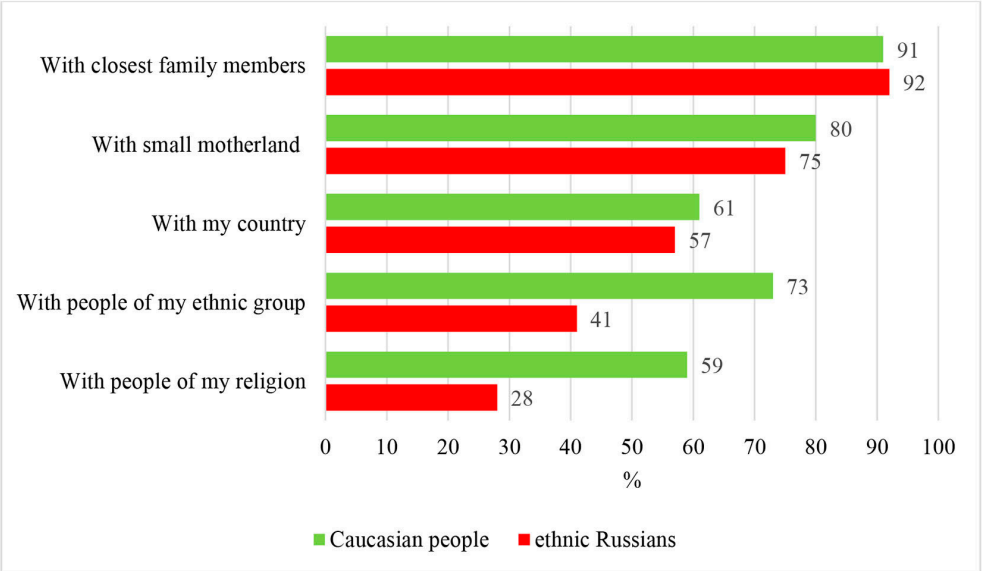

Fig. 5. The proportions of respondents' replies to the question
"How important is it to be aware of your connection with...?"
(North Caucasus Federal District, March-April 2021. N=1027,
% of the number of respondents, replies by criterion "Important")

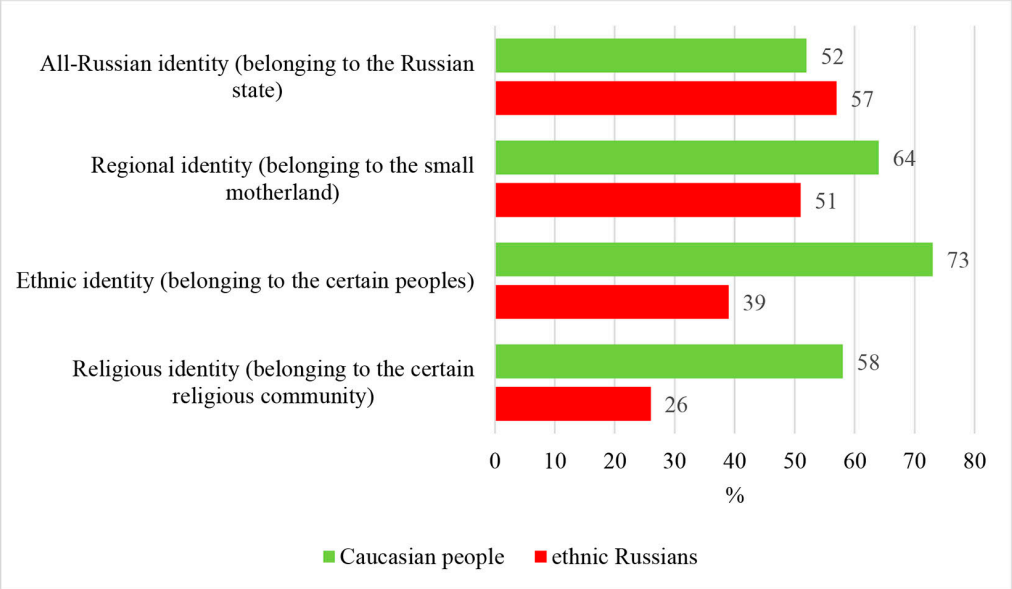

Fig. 6. The proportions of respondents' replies to the question "What identities are the most important to you?" (North Caucasus Federal District, March-April 2021. N=1027, % of the number of respondents, replies by criterion "Important")

In general, the multi-ethnic North Caucasus youth are characterized by a sense of belonging to Russian society through shared values and a command of the Russian language, patriotism, love for the country and the region. All this contributes to the consolidation, solidarity and unification of young people of different ethnicity. It can be argued that the all-Russian self-awareness of young people is still based on the unity of views on life, norms and values. At the same time, in the context of the continuing risks of destabilizing the region, the complex of unresolved economic and territorial tensions, high level of corruption and ethnic clannishness, the main consolidating factor in the multi-ethnic region is the sense of belonging to the Russian state.

Conclusion

The value field that underlies the identity of young people in the region is shaped based on both traditional and modern attitudes. For the youth of the North Caucasian peoples, many traditional values and ethnic, regional and religious identities matters more than for the ethnic Russian youth. In general, hybrid forms of identity that combine traditional and modern values characterize young people. The likelihood of conflict between those who share traditional and modern values remains, as well as the risks of its transition to the inter-ethnic level. In addition to ethnic heterogeneity and differences in value priorities, important regional factors in the shaping of identity are demarcation lines between plains and mountains, towns and villages. People in mountain villages are much more oriented towards traditional identities. There are also growing value differences among young people, who are included in a global information environment, are rapidly absorbing the modern values and older generations. Digital technologies make it possible not only to monitor the socio-political situation, but also to widely apply "soft power" to shape the national-state identity of young people in the multi-ethnic region. Currently, their potential is not fully used. In the conditions of a crisis that are traumatic for society, an increase in social inequality and the deepening of socio-cultural divisions, one of the tasks facing the state is to increase the efficiency of work in the information space to actualize all-Russian identity.

National-state beginning, belonging to the Russian state, identification with the country, common understanding of fundamental norms and values are significant unifying force in the region. Its erosion could result in the ideologization and politicization of ethnic processes, disintegration and growth of entropic processes in a multiethnic environment. In general, all-Russian self-awareness has been shaped and is important for the majority of young people, regardless of ethnicity. However, in the portfolio of young people's identities, along with the Russian national-state identity, ethnic and regional-republican identities play an important role. At the same time, there is a difference in the priorities of identity between ethnic Russian and Caucasian youth. The ethnic factor still plays a significant role in the social and political life of the region, and the problems of politicization/depoliticization of ethnicity remain valid. All this retains the risks of ethnic entrepreneurship, irrationalization of economic and political conflicts, their transformation into conflicts of identities, due to the appeal to the protection of ethnocultural values and group identities. Further analysis of the destructive sociocultural and political factors in the identification of youth in multiethnic regions. Also merited further study the issues of common value foundations of all-Russian self-awareness and filling the identity policy with guidelines for personal self-development and moral norms that support trust and social solidarity in multiethnic youth communities.

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Assessment of the Need for Psychological Help for Cancer Patients and Their Close Relatives

Anna A. Dreneva*[a], Aleksandr V. Pravednikov[a], Darya P. Chistyakova[a], Olga E. Goldman[b] and Ignat V. Bogdan[a]

[a]*State Budgetary Institution «Research Institute for Healthcare Organization and Medical Management of Moscow Healthcare Department» Moscow, Russian Federation*
[b]*ANO «Project CO-operate» (Yasnoe Utro) Moscow, Russian Federation*

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Abstract. The paper addresses the issue of the need for psychological assistance for cancer patients and their close relatives. Considering an increase in the prevalence of cancer, we observe a growing number of people who are closely faced with a critical situation of cancer and the associated physical, psychological and social difficulties. The hypothesis was that these two groups have the need for psychological help, which can be expressed explicitly (in the form of a desire to get a referral, actual visiting the specialist, thoughts about getting help), or implicitly (in the form of intense fears, emotional distress caused by the disease). The study involved cancer patients (N=73, 43 women) and close relatives of cancer patients (N=426, 268 women) over 18 years old. The respondents answered the questions of the online questionnaire about problems, experiences, fears, the desire to get a referral and actual getting psychological help, the reasons for it, psycho-stigmatizing attitudes. A pronounced need for psychological help was revealed, observed both explicitly and implicitly. An indirect confirmation of the effectiveness of psychological assistance for reducing the intensity of fears was found: the group of those who consulted a psychologist had a lower level of fears as compared to those who did not (p=0,006). The reasons for not seeking help include three main barriers: lack of information about the possibility of receiving help, its inaccessibility, psycho-stigmatizing attitudes. The results indicate the need for outreach and awareness work among both vulnerable groups and the entire population, to combat stigmatizing attitudes, as well as to inform cancer patients and their relatives about the possibility and importance of receiving psychological help.

* Corresponding author E-mail address: drenevaaa@zdrav.mos.ru
ORCID: 0000-0003-3880-5202 (Dreneva); 0000-0002-2553-2359 (Pravednikov); 0000-0002-8729-9898 (Chistyakova); 0000-0002-2490-1319 (Goldman); 0000-0002-7002-1646 (Bogdan)

Keywords: oncology, psychological state, psychological help, psycho-stigmatizing attitudes, negative emotional experience, barriers to seeking help, stigma, need for psychological help, online survey.

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Research area: medical psychology.

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Оценка потребности онкологических пациентов и их близких родственников в психологической помощи

А.А. Дренёва[a], А.В. Праведников[a], Д.П. Чистякова[a], О.Э. Гольдман[б], И.В. Богдан[a]

[a]Научно-исследовательский институт организации здравоохранения и медицинского менеджмента Департамента здравоохранения города Москвы (ГБУ «НИИОЗММ ДЗМ») Российская Федерация, Москва
[б]АНО «Проект СО-действие» (Служба «Ясное утро») Российская Федерация, Москва

Аннотация. Представлена проблема потребности онкологических пациентов и их близких родственников в психологической помощи. На фоне повышения распространенности онкологических заболеваний растет число людей, которые близко сталкиваются с критической ситуацией онкозаболевания и связанными с ней физическими, психологическими и социальными трудностями. С помощью онлайн-опроса изучена потребность онкологических пациентов и их близких родственников в психологической помощи, которая может выражаться явно (в виде желания обратиться, реального обращения, нуждаемости в помощи) либо скрыто (в виде интенсивных страхов, переживаний в связи с болезнью). В исследовании участвовали онкологические пациенты (N=73, 43 женщины) и близкие родственники онкологических пациентов (N=426, 268 женщин) старше 18 лет. Респонденты ответили на вопросы онлайн-анкеты о проблемах, переживаниях, страхах, желании обратиться и реальном обращении за психологической помощью, причинах обращения/необращения, психостигматизирующих установках. Выявлена значительная потребность в психологической помощи, наблюдаемая как явно, так и скрыто. Обнаружено косвенное подтверждение эффективности психологической помощи для снижения интенсивности страхов: группа обратившихся к психологу имела

более низкий уровень страхов по сравнению с теми, кто не обратился (p=0,006). Анализ причин необращения за помощью позволил выделить три основных барьера: неинформированность о возможности получения помощи, ее недоступность, психостигматизирующие установки. Результаты свидетельствуют о необходимости информационно-просветительской работы как среди уязвимых групп, так и среди всего населения по борьбе со стигматизирующими установками, а также по информированию онкопациентов и их близких о возможности и важности получения психологической помощи.

Ключевые слова: онкология, психологическое состояние, психологическая помощь, психостигматизирующие установки, негативные эмоциональные переживания, барьеры обращения за помощью, стигма, потребность в психологической помощи, онлайн-опрос.

Коллектив авторов выражает благодарность организаторам и партнерам конкурса волонтерских проектов «Research Got Talent»: компаниям OMI, Oprosso, НИИ организации здравоохранения и медицинского менеджмента, благотворительной службе помощи онкологическим пациентам «Ясное утро», эксперту М. Г. Ивашкиной за помощь в проведении исследования.

Научная специальность: 19.00.04 – медицинская психология.

Введение в проблему исследования

Уровень выявляемости разных видов онкологических заболеваний растет с каждым годом как в России (Kaprin et al., 2020), так и в мире (WHO report on cancer, 2020). Несмотря на значительные успехи в лечении многих видов рака, сама ситуация онкозаболевания, его диагностики и терапии является критической в самых разных аспектах жизни: практическом, финансовом, физическом, социальном, эмоциональном, психологическом и других (National Breast Cancer Centre and National Cancer Control Initiative, 2003).

Концептологические основания исследования

В фокусе настоящей статьи находятся затруднения в социально-психологических аспектах жизни, с которыми онкологические пациенты сталкиваются достаточно часто. Так, согласно данным литературы, до 64 % онкопациентов испытывают стресс в связи со своим заболеванием (Carlson et al., 2019), до 66 % сообщают о тревоге и депрессии (Beljaev et al., 2018), до 75 % переживают из-за изменений тела (Fingeret, Teo, Epner, 2014), до 90 % (в первую очередь пациентов старшего возраста онкогинекологического и онкоурологического профилей) испытывают переживания, связанные с сексуальностью (Huffman et al., 2016).

Важно, что с затруднениями в перечисленных аспектах сталкиваются не только пациенты, но и их родственники, причем последние могут испытывать даже более сильные переживания, чем сами пациенты. Например, в работе (Harrison, Haddad, Maguire, 1995) показано, что родственники, по сравнению с пациентами, в 7 раз чаще испытывают беспокойство из-за отношений с пациентами, чем, наоборот, пациенты – из-за отношений с родственниками; в 5 раз чаще – из-за реакции пациента на болезнь; в 3 раза чаще – из-за физического состояния пациента; в 2,5 раза чаще – из-за будущего; в 1,5 раза чаще – из-за самой болезни. Эти переживания могут усиливаться под влиянием личностных особенностей родственника, интенсивностью его взаимодействия с больным, например, уходом за ним (Stajduhar et al., 2010) и другими факторами.

Рассмотренные проблемы указывают на потребность в психологической помощи и самих онкопациентов, и их родственни-

ков, которая, однако, не всегда может осознаваться ими в достаточной мере. Одной из причин этого выступают распространенные в обществе психостигматизирующие установки, порождающие негативное отношение к психологической поддержке, к специалистам соответствующего профиля, к людям, которые обращаются за такой помощью. В России такие установки достаточно распространены (Anikina et al., 2020; POF, 2014).

Постановка проблемы

В то же время, по данным исследований, профессиональная психологическая поддержка обнаруживает позитивное влияние на эмоциональное состояние пациентов и родственников (Barre et al., 2018), комплаентность пациента и эффективность лечения (Andersen et al., 2007). В связи с этим представляется крайне важным исследование потребности онкологических пациентов и их родственников в психологической помощи, в том числе с целью их дальнейшего информирования о возможностях ее получения и перенаправления к профильным специалистам. Актуальность этого вопроса обеспечивается крайне низкими показателями обращения за психологической помощью в России в целом по населению (POF, 2014) и по онкологическим пациентам в частности (Beljaev et al., 2018), в то время как получение такой помощи может позитивно повлиять на их физическое и психическое состояние, а также на качество жизни (Andersen et al, 2007).

Цель исследования: изучение потребности онкологических пациентов и их близких родственников в психологической помощи в виде наличия и интенсивности негативных переживаний, страхов, трудностей в различных жизненных аспектах; изучение причин необращения за психологической помощью.

Гипотеза: онкологические пациенты, а также родственники онкологических пациентов испытывают значительную потребность в психологической помощи, которая может выражаться явно (в виде положительного ответа на вопрос о необходимости помощи, желании обратиться за помощью, реальном обращении) либо скрыто (в виде наличия и значительной выраженности переживаний, проблем и страхов, связанных с онкозаболеванием у себя/близкого).

Методология

Исследование проведено в рамках международного социально ориентированного конкурса «Research Got Talent».

В исследовании приняли участие представители двух групп: онкологических пациентов и близких родственников онкологических пациентов.

В выборку онкологических пациентов вошло 73 человека (43 женщины), 81 % из которых старше 50 лет. Две трети респондентов имели высшее образование (включая неоконченное). Большая часть респондентов на момент опроса находилась в ремиссии (41 %) или выздоровела (30 %). Распределение респондентов по стадии онкозаболевания было следующим: 0-я стадия – 26 %, 1-я – 19 %, 2-я – 26 %, 3-я – 15 %, 4-я – 10 %, затруднились ответить 4 %. Соотнесение групп онкозаболеваний по локализации с данными статистики (Kaprin et al., 2020) не показывает существенных расхождений.

Выборка родственников пациентов составила 426 человек (268 женщин). Распределение по возрастным группам было относительно равномерным: 18–34 года – 27 %, 35–49 лет – 29 %, 50–64 года – 22 %, 65 лет и старше – 22 %. Распределение родственников с онкозаболеванием по виду родства следующее: болели бабушка/дедушка – 27 %, отец/мать – 37 %, сестра/брат – 9 %, супруг/партнер – 7 %, сын/дочь – 2 %, другой родственник – 18 % (в случае, если таких родственников было несколько, респондентам было предложено выбрать того, кто болел последним).

Начальный этап исследования включал в себя разработку инструментария для опроса самих пациентов и их родственников на основе данных литературы. Анкета состояла из следующих блоков вопросов: социально-демографические характеристи-

ки, клинические характеристики, наличие и степень выраженности проблем, страхов и переживаний в связи с собственной болезнью/болезнью близкого, потребность в психологической помощи и информированность о такой возможности, опыт обращения за психологической помощью, выраженность психостигматизирующих установок, выбранных на основе источника (Vajnshtejn et al., 2015).

Исследование проводилось в июне 2021 года с помощью онлайн-опроса участников онлайн-панели компании OMI, репрезентирующей взрослое население крупных городов России (100 тысяч и более жителей). Фильтрующим вопросом выступил следующий: «Ниже перечислены различные группы близких, знакомых Вам людей. Есть ли среди них те, кому когда-либо было диагностировано онкологическое заболевание (рак)?». В случае выбора варианта ответа «Я сам имею/перенес онкологическое заболевание» респондент переходил к анкете для пациентов, в случае выбора варианта «Близкие родственники (мать/отец, дочь/сын, брат/сестра, бабушка/ дедушка, супруг/партнер) имеют/перенесли заболевание» респондент переходил к анкете для родственников пациентов. Остальные респонденты отвечали на вопросы анкеты для населения, не столкнувшегося близко с онкологией, данные по которой в настоящей статье не приводятся.

В составе анкеты, разработанной авторами, онкологическим пациентам было также предложено оценить уровень переживаний за последний месяц в связи с заболеванием согласно методике «Шкала самооценки интенсивности переживаний» (Beljaev et al., 2018): «По шкале от 0 до 8 оцените уровень Ваших переживаний, связанных с болезнью, лечением и изменениями в жизни в связи с ними за последний месяц».

Для программирования онлайн-анкеты использовалась онлайн-платформа oprosso.net. Для статистической обработки данных использовался статистический пакет IBM SPSS version 23. Для сравнения групп использовались параметрические (t-тест Стьюдента) и непараметрические (Манна-Уитни) критерии для независимых выборок. Для определения однородности отдельных вопросов использовался иерархический кластерный анализ (метод межгрупповой связи). Для анализа взаимосвязей между номинативными переменными использовался критерий согласия Пирсона.

Результаты

Результаты представлены отдельно по выборкам онкологических пациентов и родственников онкологических пациентов.

Онкологические пациенты. Согласно ответам на вопрос «Укажите, что из перечисленного являлось проблемой для Вас за последний месяц?», онкологические пациенты сталкивались с рядом трудностей, которые были классифицированы по четырем группам (National Breast Cancer Centre and National Cancer Control Initiative, 2003): физические, практические, социальные и эмоциональные. Фокусом настоящей статьи выступили последние две группы. Среди социальных трудностей наблюдались проблемы в отношениях с супругом/партнером (23 % из тех, кто положительно ответил на вопрос о наличии супруга либо партнера), а также в отношениях с другими людьми (18 %). Из эмоциональных трудностей наиболее распространенными оказались нервозность (55 %), печаль (51 %), страхи (48 %), подавленность (43 %) и потеря интереса к привычным занятиям (37 %).

Результаты методики IPOS показывают, что средний уровень переживаний пациентов за последний месяц в связи с болезнью, лечением и изменениями в жизни в связи с ними составил 4,93 из 8, при этом оценку 6 баллов и выше, характеризующую уровень сильного и сверхсильного эмоционального напряжения (Beljaev et al., 2018), поставили 50 % респондентов. Участникам был также задан открытый вопрос о причинах наибольшего переживания. Частотными ответами выступили другие (неонкологические) заболевания (18 % выборки), само онкологическое заболевание и возможное

ухудшение здоровья (14 %), страх перед лечением (10 %) и возвращение болезни (7 %).

Анализ ответов на вопрос о страхах показал разброс средних оценок от 2 до 3,4 баллов из 5. Наиболее сильными стали страхи «стать обузой для близких» (3,4 балла), «не хватит денег на лечение» (3,1) и «неопределенности/неизвестности/будущего» (3,0).

Выявлено, что 84 % опрошенных считают, что онкологические пациенты нуждаются в психологической помощи; из них 43 % полагают, что она нужна всем онкопациентам, и 41 % – что лишь некоторым группам. Ответы на открытый вопрос о том, какие именно группы онкологических пациентов нуждаются в психологической помощи, содержали такие категории, как «психологически неустойчивые» (26 % респондентов), «тяжелобольные» (19 %), «одинокие, без поддержки семьи» (19 %), «кто сам попросит» (15 %), «те, кто в плохом психологическом состоянии» (11 %), «слабые» (7 %).

Несмотря на отмечаемую большинством потребность в психологической помощи, желание обратиться за ней возникало лишь у 16 % респондентов, а в реальности обратилось всего 7 % (5 человек из 73). Среди немногочисленных ответов на открытый вопрос о причинах необращения за психологической помощью встречались в том числе стеснение/стыд, отсутствие информации о том, куда именно обращаться, и отсутствие такой возможности. Обращает на себя внимание тот факт, что лишь 21 % опрошенных получали от медицинских работников информацию о возможности получения психологической помощи, а 27 % ответили, что не знают, «что делать и к кому обратиться в случае, если потребуется профессиональная помощь в решении психологических проблем».

Родственники онкологических пациентов. Так же как и пациенты, близкие родственники онкологических пациентов сталкиваются с рядом трудностей, которые могут быть выражены даже сильнее, чем у пациентов. Так, среди эмоциональных проблем наиболее распространенными были печаль (о которой сообщили 81 % респондентов), различные страхи (69 %), подавленность (58 %), нервозность (57 %) и потеря интереса к привычным занятиям (33 %). Кроме того, 28 % родственников отметили наличие проблем во взаимоотношениях с близким с онкозаболеванием.

Вопрос о степени выраженности переживаний в связи с онкоболезнью близкого родственника выявил их значительную интенсивность: 6,96 из 8, при этом около половины родственников отметили максимальную оценку 8 баллов. Сравнение групп, осуществлявших и не осуществлявших уход за онкобольным родственником, показывает значимые различия в среднем уровне переживаний: 7,34 и 6,79 баллов соответственно ($t(295)=3,494$, $p=0,001$). Более высокий уровень переживаний также отметили те родственники, которые выбрали вариант «Я до сих пор не смог оправиться от утраты» на вопрос «Если среди Ваших ближайших родственников кто-либо умер от онкологии, укажите, пожалуйста, какое из высказываний лучше всего отражает Ваше переживание потери?» ($p<0,001$) – таких респондентов было 23 % из выборки (от N=309, после исключения вариантов «никто не умер» и «переживал не так сильно, так как мы были не очень близки»).

Ответы родственников онкопациентов о наличии страхов, связанных с заболеванием близкого, также показывают их более высокую интенсивность по сравнению со страхами пациентов. Значения оценок страхов варьируют от 2,5 до 4,0 баллов из 5 с наиболее сильным страхами «что лечение не поможет» (4,0 балла), «боли и страдания» (4,0), «неопределенности/неизвестности/будущего» (3,7) и страхом смерти (3,7). Мы предположили, что вопросы по оценке страхов являются однородными и проверили эту гипотезу с помощью иерархического кластерного анализа. По его результатам было получено, что на выборке родственников оценки по страхам группируются в один кластер, в связи с чем суммирование оценок по всем страхам может считаться правомерным. Поскольку было предложено оценить выраженность 9 страхов по шка-

ле от 1 до 5, минимальным значением этой «суммарной шкалы страхов» является 9, максимальным – 45. Средний балл по выборке родственников составил 27,6, причем средняя оценка по подвыборке женщин оказалась значимо выше, чем среди мужчин,– 28,46 и 26,07 ($t(400)= –2,891$, $p=0,004$).

Средняя оценка выраженности всех страхов была также использована для косвенной оценки эффективности психологической помощи. Выборка родственников была разделена на две подгруппы по итогам ответа на вопрос «Возникало ли у Вас желание обратиться за психологической помощью в период онкологической болезни Вашего близкого родственника?»: положительно ответило 67 человек (16 % от совокупной выборки родственников), отрицательно – 284 человека. Выявлено, что средний уровень выраженности страхов у первой группы составил 30,9 баллов, у второй – 26,5 ($t(349)=4,053$, $p<0,001$). Далее группа ответивших положительно была разделена на две подгруппы по результатам ответа на вопрос: «Обращались ли Вы за психологической помощью по поводу переживаний, связанных с болезнью Вашего близкого родственника»: положительно ответило 19 человек (5 % от совокупной выборки близких родственников пациентов), отрицательно – 48 человек. Сравнение средних оценок выраженности страхов показывает значимо более низкую оценку в группе обратившихся за психологической помощью по сравнению с теми, у кого такое желание возникало, однако в итоге они не обратились: 26,8 и 32,5 соответственно ($t(65)= –2,837$, $p=0,006$; дополнительное сравнение групп с помощью непараметрического критерия Манна-Уитни показывает близкие результаты – $U=266$, $p=0,008$).

Анализ ответов на открытый вопрос о причинах необращения за психологической помощью позволяет выявить такие категории, как отсутствие возможности/доступности такой помощи (19 % респондентов), отсутствие необходимости (16 %), отсутствие времени (15 %), отсутствие информации о том, куда именно обращаться (11 %), предполагаемая высокая стоимость такой помощи (10 %).

Аналогично выборке пациентов родственники отмечают высокий уровень потребности в психологической помощи для родственников онкопациентов: так ответили 81 % выборки, причем 36 % из них считают, что она нужна всем близким родственникам, 45 % – отдельным группам, среди которых главным образом назывались конкретные близкие родственники (дети, родители, супруги, «самые близкие»). При этом так же, как и в случае с онкопациентами, значительная часть родственников онкобольных не знает, «что делать и к кому обратиться в случае, если потребуется профессиональная психологическая помощь в решении психологических проблем» – так ответило 37 % респондентов, а информацию о возможности получения такой помощи от медицинских работников получали лишь 12 % родственников.

Психостигматизирующие установки. Обеим группам респондентов (пациентам и родственникам) было предложено оценить степень согласия с суждениями, связанными с психостигматизирующими установками (табл. 1).

Данные табл. 1 показывают достаточно выраженную распространенность психостигматизирующих установок среди обеих выборок: от шестой части до трети в зависимости от высказывания для онкологических пациентов и от пятой части до трети среди родственников онкологических пациентов. По оценке согласия с высказыванием «Обращение к психологам не помогает, это пустая трата времени» наблюдается тенденция к значимым различиям между выборками ($\chi(3)=3,485$, $p=0,062$).

Обсуждение

Результаты исследования показывают значительную потребность в психологической помощи как среди онкологических пациентов, так и среди их ближайших родственников. Эта потребность выражается как прямо – в виде достаточно большого процента положительно ответивших на вопрос о необходимости такой помощи,

Таблица 1. Оценка степени согласия с психостигматизирующими высказываниями среди онкологических пациентов и близких родственников онкологических пациентов

Table 1. Assessment of the degree of agreement with psychostigmatizing statements among cancer patients and close relatives of cancer patients

	Онкологические пациенты (выбравшие «4» или «5» из 5, где 5 – «полностью согласен», %)	Близкие родственники онкологических пациентов (выбравшие «4» или «5» из 5, где 5 – «полностью согласен», %)
Если люди из моего личного и профессионального окружения узнают о моем обращении за психологической помощью, мне будет неловко	15	19
Люди должны сами решать свои проблемы, а обращаться за психологической помощью нужно только в крайнем случае	33	30
Обращение к психологам не помогает, это пустая трата времени	34	19

а также части ответов о желании обратиться за помощью, так и косвенно – в виде значительной части выборки, сообщившей о столкновении с различного рода проблемами, трудностями, переживаниями и страхами. Полученные результаты согласуются с данными других исследований (напр., Jarovaja, 2014; Grassi et al., 2017).

Важно, что если потребность онкопациентов в психологической помощи отмечается достаточно часто, то родственники онкобольных рассматриваются в качестве реципиентов психологической поддержки гораздо реже, в то время как по данным настоящего исследования, на одного болеющего в настоящий момент онкопациента приходится трое близких родственников, включенных в травмирующую ситуацию и испытывающих негативные переживания наравне с пациентом. В этой связи в контексте организации психологической помощи важно учитывать обе уязвимые группы.

По ряду показателей были обнаружены гендерные различия. В частности, совокупный уровень интенсивности страхов оказался выше в женской подвыборке родственников пациентов по сравнению с мужской, что согласуется с данными литературы (Friðriksdóttir N. et al., 2011). Это может быть связано с гендерно-социальными стереотипами о большей чувствительности и подверженности женщин подобным эмоциональным реакциям, а также меньшей склонностью мужчин признаваться в наличии негативных эмоциональных реакций, что может быть обусловлено наличием в социуме гендерных стереотипов (Anikina et al., 2020). Согласно исследованиям мужчины в дополнение к отрицанию необходимости психологической помощи чаще женщин преуменьшают психологические проблемы (Vogel et al., 2011; 2014).

Обнаруженные на выборке родственников пациентов различия в уровне переживаний между теми, кто осуществлял уход, и теми, кто не осуществлял, указывает на необходимость учета этого фактора при работе с родственниками в виде предоставления дополнительной поддержки психологических и социальных работников и профилактики негативных эмоциональных реакций. В особенности это релевантно для родственников больных, требующих паллиативного ухода (Götze et al., 2014). Кроме того, на основе данных о том, что почти четверть родственников сообщила о том, что они «до сих пор не смогли оправиться от утраты», важно учитывать специфику состояния людей, потерявших родственника в результате онкозаболевания. В рамках организации психологической помощи для онкобольных

в тяжелом состоянии и их родственников может быть рекомендовано сотрудничество с паллиативными службами.

Несмотря на наблюдаемую потребность в психологической помощи, в реальности за ней обратился лишь незначительный процент респондентов (7 % пациентов и 5 % родственников). Одной из вероятных причин этого может быть распространенность в обществе психостигматизирующих установок, высказываемых даже теми, кто столкнулся с серьезными трудностями в виде онкологического заболевания у себя или близкого. О психостигматизирующих установках свидетельствуют также категории ответов на открытый вопрос о том, каким группам нужна психологическая помощь: треть респондентов назвала «психологически неустойчивых» и «слабых», что показывает негативное отношение к тем, кто нуждается и обращается за психологической помощью. Сходные закономерности отмечены и другими авторами (Beljaev et al., 2018). В контексте стигматизации психологической помощи важно учитывать гендерные различия и рассматривать мужчин как более уязвимую группу по сравнению с женщинами, поскольку они менее склонны обращаться к профессиональной психологической помощи (Vogel et al., 2014)

Анализ причин необращения за психологической помощью позволяет выделить три основных барьера: 1) недоступность психологической помощи (в том числе недостаточно развитая инфраструктура – отсутствие соответствующих служб и специалистов рядом с местом проживания/лечения, предполагаемая высокая стоимость), 2) недостаточная информированность (в частности, непонимание необходимости работы с негативными переживаниями, незнание, куда обратиться за помощью) и 3) психостигма (то есть стыд или стеснение потребности в психологической поддержке, отсутствие уверенности в том, что психолог может помочь в решении проблем). В совокупности наличие трех этих барьеров свидетельствует о необходимости информационно-просветительской работы, направленной как на уязвимые группы (мужчины, люди в критической ситуации болезни), так и в целом на население.

Заключение

Результаты исследования позволяют заключить, что онкологические пациенты, равно как и их близкие родственники, сталкиваются со множеством негативных переживаний, страхов и затруднений, что свидетельствует о наличии потребности в психологической помощи. В то же время эта потребность лишь у небольшой части респондентов преобразуется в желание обратиться за помощью либо реальное обращение. В качестве возможных барьеров обращения были выделены недоступность такой помощи, недостаточная о ней информированность и психостигматизирующие установки. Полученные данные свидетельствуют о необходимости информационно-просветительской работы по борьбе с психостигматизирующими установками, а также работы по удовлетворению существующей осознаваемой и неосознаваемой потребности в психологической помощи путем систематической работы с данными группами населения со стороны квалифицированных психологов (например, в форме построения полноценной онкопсихологической службы).

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An Integrative Approach to Organizing Physics Classes for Foreign Students

Maxim N. Ulyanov*[a] and Evgeniya P. Ulyanova[b]
[a]*Chelyabinsk State University*
Chelyabinsk, Russian Federation
[b]*National Research University South Ural State University*
Chelyabinsk, Russian Federation

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Abstract. There are many articles about the use of films in the classroom of Russian as foreign language (RFL), but little attention is paid to the use of video materials in the classroom in subjects, in particular in physics. However, the importance of this type of work can hardly be overestimated: the audiovisual method of transmitting information increases the quantity and quality of information received by the student, the clarity and spectacularity of the material increases interest in its study, and the discussion of the problems of the film forms communicative and professional competence. The aim of this article is to describe the main stages and techniques of working on a video film in a physics lesson. The film «Interstellar» by Christopher Nolan was chosen for testing, since it can be an excellent addition to the study of the general theory of relativity, gravity, certain issues of astrophysics and the quantum theory of measurements.
99 students of the preparatory department of technical and biomedical profiles took part in the research. Qualitative and quantitative approaches were applied such as a pedagogical experiment, observation, survey, questionnaire, testing, analysis of the most significant results obtained in the course of work to analyze the results of the research.
The presented materials allow us to conclude that modern education is actively developing and allows you to build the educational process in a new way: integrate the methodological experience of related disciplines, apply new interactive opportunities, combining them with classical methods. A positive effect on the development of students' outlook, increasing their motivation and improving the quality of teaching physics has been proven.
The presented materials can be used to train teachers of natural sciences, to conduct classes in the classroom for both foreign students and Russian students. The described model can be successfully applied in practice, as well as used in the development of lessons on other topics and films.

Keywords: integrative approach, education, pedagogy, teaching methods, Russian as a foreign language, physics, movie watching.

* Corresponding author E-mail address: max-39@yandex.ru

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Интегративный подход в организации занятия по физике для иностранцев

М.Н. Ульянов[а], Е.П. Ульянова[б]
[а]Челябинский государственный университет
Российская Федерация, Челябинск
[б]Южно-Уральский государственный университет (НИУ)
Российская Федерация, Челябинск

Аннотация. Об использовании фильмов на занятиях по русскому как иностранному (РКИ) написано много статей, однако мало внимания уделяется применению видеоматериалов на занятиях по предметам, в частности по физике. Значение данного вида работы трудно переоценить: аудиовизуальный способ передачи информации улучшает качество и количество получения информации студентом, наглядность и зрелищность материала повышают интерес к его изучению, а обсуждение проблематики фильма формирует коммуникативную и профессиональную компетенции. Целью настоящей статьи стало описание основных этапов и приемов работы по просмотру видеофильма, применяемых в методике преподавания РКИ и перенесенных на занятие по физике с учетом предметной специфики. Для апробации выбран фильм Кристофера Нолана «Интерстеллар», поскольку он может стать отличным дополнением по изучению общей теории относительности, гравитации, отдельных вопросов астрофизики и квантовой теории измерений.
В исследовании приняли участие 99 студентов подготовительного отделения технического и медико-биологического профилей. Для анализа результатов исследования были применены качественный и количественный подходы – педагогический эксперимент, наблюдение, опрос, анкетирование, тестирование, анализ наиболее значимых результатов, полученных в ходе работы.
Представленные материалы позволяют сделать вывод о том, что современное образование активно развивается и позволяет по-новому выстраивать учебный процесс: интегрировать методический опыт смежных дисциплин, применять интерактивные возможности, комбинируя их с классическими методами. Доказано положительное влияние на развитие кругозора студентов, повышение их мотивации и улучшение качества обучения физике.
Представленные материалы могут быть использованы для подготовки преподавателей естественно-научных дисциплин, для проведения занятий в аудитории как иностранных студентов, так и русских обучающихся. Описанную модель можно успешно применять на практике, а также использовать при разработке занятий по другим темам и фильмам.

Ключевые слова: интегративный подход, обучение, педагогика, методика преподавания, РКИ, физика, просмотр фильма.

Введение

Преподавание базовых дисциплин не остается сегодня в рамках учебника, а выстраивается как динамично развивающийся процесс, учитывающий новые открытия и современные разработки. Так, в последние годы все больше Нобелевских премий присуждают за открытия в области физики космоса или астрономии. К последним можно отнести открытие сверхмассивного компактного объекта в центре нашей галактики и того, что образование чёрных дыр с необходимостью следует из общей теории относительности (2020); теоретические исследования в физической космологии и открытие экзопланеты на орбите солнцеподобной звезды (2019); решающий вклад в детектор LIGO и наблюдение гравитационных волн (2017) (The Nobel Prize in Physics, 2017, 2019, 2020). Однако рассказать иностранным слушателям на занятиях по физике в рамках обучения РКИ об открытиях, последних достижениях, о теоретических и практических аспектах с научной точки зрения – непростая задача, поскольку требует и от преподавателя, и от студента серьёзных усилий: в первом случае – понятной презентации материала и раскрытия научной проблемы, а во втором – высокого уровня подготовки обучающегося и владения терминологией.

В статье представлены особенности работы с включением просмотра фильма Кристофера Нолана «Интерстеллар» на занятии по физике. Этот фильм, пожалуй, самым научный и правдоподобный с точки зрения физики, поскольку консультантом по технической части в нем выступил лауреат Нобелевской премии 2017 года, один из главных экспертов по общей теории относительности, специалист из Калифорнийского технологического университета Кип Торн. Сюжет строится вокруг космического путешествия группы исследователей под командованием Купера от одной звезды к другой. Путешествие предпринято с целью поиска новой планеты, на которой можно создать колонию и избежать засухи, пыли, голода и гибели всего живого на Земле. Полет главных героев на огромные расстояния становится возможным благодаря открытию гравитационной аномалии – червоточины, или кротовой норы, вблизи Сатурна.

Подчеркнем, что практическая значимость данной статьи видится в том, что это готовый материал для проведения занятия в аудитории как иностранных, так и русских студентов, а описанные здесь основные принципы презентации видеоматериала можно использовать при разработке новых тем. Все этапы работы на занятии и задания выстроены в органичном соединении подходов преподавания РКИ и физики.

Обзор литературы

Для улучшения понимания учебного материала слушателями преподаватели используют различные методы и технологии: мобильные приложения (Maev, Zhiltsova, 2021; Nadkha, Maslova, Kuzmina, 2020), электронные образовательные платформы (Goloshumova, Chernova, 2017), игровые технологии (Birova, 2015; Malysheva, 2010). Еще одним эффективным способом служит использование видеофильмов или мультфильмов на занятиях. Об алгоритме работе с аутентичными фильмами в рамках обучения РКИ, критериях выбора фильма и методических аспектах применения видеоматериала сообщается в работах Т. С. Поварницыной, И. Чайбок-Тверефу и др. (Povarnitsyna, 2021; Arias, 2016; Csajbok-Twerefou, 2010; Khurmuz, 2019).

Демонстрация видеоматериала становится частью интегративного подхода, поскольку предполагает раскрытие интеллектуально-когнитивного потенциала личности обучающихся, развитие способностей к сотрудничеству, общению, ориентацию на работу в группе и совместное обсуждение проблем. Ведь мы помним, что «интегративный подход предполагает создание такой позиции исследования, в соответствии с которой образование рассматривается как процесс и результат»

интеграции (Nikolaeva, 2012) на 4 уровнях: межпредметном, внутрипредметном, межличностном, внутриличностном (Kharunzhev, Kharunzheva, 2003).

«Использование на уроках видеофильмов – это не только использование еще одного источника информации, но и эффективный прием обучения. Известно, что большинство людей запоминает 15 % услышанного и 25 % увиденного. Одновременное сочетание аудиальной и визуальной информации повышает запоминаемость до 65 %. Это значит, что видеоресурсы очень эффективны при изучении любой дисциплины» (Gudimova, 2008). В основном работу с фильмами применяют при изучении русского языка как иностранного (Nazarenko, Khalyavina, 2014; Strelchuk, 2011; Ivanova, Il'ina, 2016; Melnik, 2017). Также есть информация об использовании фильмов по юриспруденции (Dementyeva, 2016), истории (Gertsman, 2017). Но как показал анализ литературы, практически отсутствуют публикации по применению фильмов в обучении физике, за исключением небольшого количества, например (Efthimiou, Llewellyn, 2003, 2004; Scott, 1960). Это связано с тем, что в процессе «преподавания иностранным студентам трудно ограничиться только чисто профессиональной терминологией, необходимо приводить большое количество примеров, описывая явления и взаимодействия, которые можно наблюдать в окружающем мире» (Pogibelskaya, Pogibelskiy, 2017; Fetisova, 2015). Тем не менее с помощью фильмов можно проиллюстрировать основные принципы физической науки, анализируя отдельные сцены на фоне фундаментальных физических законов, привлечь внимание к изучаемым явлениям и проблемам, поставленным перед современными учеными и приобретающим порой философский характер, а также понять, почему на самом деле сцена могла или не могла произойти, как показано в фильме. Кроме того, в данном случае реализован принцип наглядности – комментарий преподавателя будет сопровождаться качественным видеорядом.

Материалы и методы

При обучении иностранных студентов следует помнить, что они изучают теоретический материал на неродном языке, а это значит, что просмотр фильма на занятии будет требовать определенной подготовки. В начале статьи мы говорили об исследованиях, описывающих методику работы с видеоматериалом на уроках РКИ, именно на их труды мы опирались при создании и апробации материалов для нашего занятия, после чего последовал анализ результатов.

Работа с фильмом на занятии традиционно проводится на 4 этапах: подготовительном, просмотровом, постпросмотровом (контроль понимания основного содержания фильма), итоговом (обсуждение фильма, формирование профессиональной компетенции). Подготовка к просмотру начинается предварительным опросом, проверяющим уровень знаний по данной теме, а также сопровождается введением «ключевых слов и выражений, необходимых для понимания основных эпизодов фильма, предварительным лингвокультурологическим комментарием» (Tsertsvadze, 2016) и, конечно же, знакомством с сюжетом.

Результатом изучения публикаций по РКИ стала разработка материалов, предваряющих, сопровождающих и завершающих просмотр фильма «Интерстеллар» а также анализ дискуссионных вопросов, поставленных преподавателем перед студентами и возникших в ходе занятия.

После работы с базовой лексикой уместным будет выполнение тестовых заданий, которые помогут выявить уровень обучающихся перед просмотром фильма, а затем в конце изучения темы рекомендуется провести тест повторно. В качестве заданий можно предложить следующие вопросы:

1. Какой ученый является автором специальной теории относительности (СТО)?

а) Макс Планк
б) Стивен Хокинг
в) Альберт Эйнштейн
г) Роджер Пенроуз

2. В каком году была создана специальная теория относительности? а) 1900 б) 1905 в) 1915 г) 1919

3. В какое время были заложены основы теории относительности?

а) середина XIX века

б) начало XIX века

в) конец XIX века

г) начало XX века

4. Одной из нерешенных проблем физики черных дыр является теорема …

а) об отсутствии волос

б) о наличии зубов

в) о торчащих ушах

г) о длине ресниц

5. Когда вошёл в употребление сам термин «чёрная дыра»?

а) в 1915 году

б) в конце 1960-х годов

в) в 1988 году

г) в 1933 году

6. Каким образом появляются черные дыры?

а) из-за сжатия звезды

б) во время Большого взрыва

в) из-за сжатия центральной части галактики

г) все случаи возможны

7. Что произойдёт с космонавтом, падающим в чёрную дыру?

а) его сразу раздавит гравитацией

б) его разорвёт на части приливными силами

в) его вытянет, как спагетти

г) ничего не произойдёт, он будет просто вечно падать

8. Какие частицы способны покидать черные дыры?

а) фотоны

б) кварки

в) барионы

г) лептоны

К ключевым словам и выражениям можно отнести такие понятия, как черная дыра, сингулярность, кротовая нора, гравитация, червоточина, теория относительности, экзопланета, замедление времени, горизонт событий. Так, например, можно ввести понятие кротовой норы как некоего тоннеля, соединяющего разные участки пространства-времени, которые находятся на значительном расстоянии друг от друга в одной или разных вселенных.

Кроме того, перед просмотром фильма необходимо рассказать об основных постулатах и принципах общей и специальной теорий относительности (ОТО и СТО) Эйнштейна (Einstein, 1905, 1915, 1916). Из решения уравнений ОТО студенты убедятся в возможности существования кротовых нор, которые изображаются в виде согнутой двумерной поверхности.

Мы уже говорили о важности упрощения и визуальном представлении материала, в связи с этим рекомендуем демонстрацию хорошо известного и наглядного примера принципа действия кротовой норы, который будет способствовать качественному пониманию теории. «Если нарисовать на бумаге пункт А и пункт Б, мы можем карандашом прочертить путь от одного пункта к другому. Если сложить этот лист пополам и совместить эти пункты на двух половинках, проткнув карандашом бумагу, мы попадём из пункта А в пункт Б гораздо быстрее»[1], значительно сократив расстояние (рис. 1). Таким образом, кротовая нора – это короткий путь. Но, по словам американского физика-теоретика Мичио Каку (Kaku, 2006, 2018, 2021), если бы ученые создали кротовую нору искусственным образом, они бы столкнулись с ее нестабильностью, что привело бы кротовую нору к самоликвидации и гибели всех ее исследователей при попытке приблизиться к ней или даже пройти сквозь нее. Кроме того, не нужно забывать об излучаемой кротовой норой гигантской радиации, несовместимой с жизнью.

Для искривления пространства-времени необходимо мощное гравитационное поле объекта огромной массы – черной дыры, гравитация которой настолько велика, что ничто не способно покинуть ее пределы: «Граница дыры с окружающим

[1] Nauka v “Interstellar”: pravda ili vymysel? [Science in “Interstellar”: Fact or Fiction?]. Available at: http://newtonew.com:81/science/nauka-v-interstellar-pravda-ili-vymysel (accessed 24 January 2022).

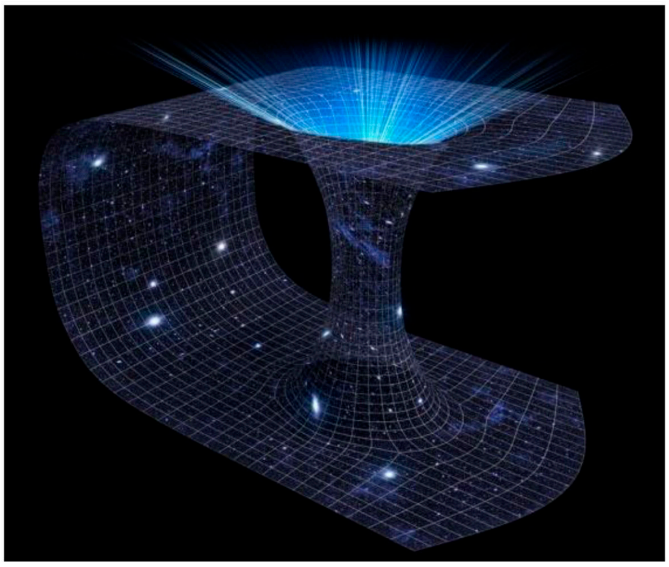

Рис. 1. Модель обыкновенной кротовой норы
Fig. 1. Model of an ordinary wormhole

пространством называется горизонтом событий. Переходя сквозь него, тело, как считается, обратно (по крайней мере, тем же путем) выйти не может. Казалось бы, поскольку материя может попадать в чёрную дыру, но не может её покидать, масса чёрной дыры со временем должна только возрастать». Но это не так. Стивен Хокинг показал, что чёрные дыры могут терять массу за счёт теплового излучения, спонтанно испускаемого черной дырой и уменьшающего энергию вращения и ее массу (Hawking, 1975). Такое излучение названо излучением Хокинга.

Считается, что «черная дыра образуется в результате гравитационного коллапса некоторых типов звезд или вещества в центрах галактик, но ученые не исключают их образование еще во времена Большого взрыва и при реакциях элементарных частиц. Притяжение черной дыры так велико, что способно захватить целую звезду»[2]. Когда звезда движется прямо на черную дыру, ее судьба плачевна и предсказуема[3]. Если же её орбита пролегает рядом с черной дырой, то ее притяжение «попросту разрывает небесное тело на части, а большая часть материи, ранее составлявшей тело звезды, попадает на орбиту черной дыры и формирует аккреционный диск. Он излучает свет, тепло и радиацию, так что вполне может заменить солнце»[4].

После предварительного обсуждения ключевых понятий и явлений, тематики фильма и проблем изучения космоса можно начинать показ фильма. Хорошей помощью для студентов станут карточки, которые обучающиеся могут заполнять в ходе просмотра. Предложенные карточки содержат вспомогательные слова и опорные вопросы, касающиеся главных героев фильма, их целей, задач и результатов.

Например, были предложены следующие вопросы: 1. Во время просмотра фильма запишите имена главных героев. 2. Укажите возраст героев. 3. В чем заключалась миссия героев? Была ли она выполнена?

[2] Teoreticheskaya fizika Kipa Torna v fil'me "Interstellar" [Theoretical physics of Kip Thorne in the movie "Interstellar"]. Available at: https://www.meta.kz/interesnie-fakti/940964-teoreticheskaya-fizika-kipa-torna-v-filme-interstellar.html (accessed 24 July 2021).

[3] «Interstellar» s tochki zreniya nauki ["Interstellar" in terms of science]. Available at: https://www.mirf.ru/kino/interstellar-nauchny-film/ (accessed 24 July 2021).

[4] ibid

Каким образом? 4. Запишите краткую характеристику главных героев. 5. Запишите, какие физические термины и понятия используют герои в эпизодах полета через кротовую нору, около черной дыры, при обсуждении возникающих проблем на космическом корабле и т.д.

На этом этапе рекомендуется выполнение заданий на соответствие или выбор верного утверждения, поскольку такой тип заданий снимает языковые и речевые трудности у студентов, позволяя увидеть написание слова или уточнить значение в словаре (рис. 2).

На следующем этапе мы проверяем, насколько корректно обучающиеся поняли изображенные события и проблематику фильма – преподаватель смотрит правильность заполнения карточек, при необходимости дает студентам комментарий. После чего следует обсуждение фильма и выход на уровень обсуждения теоретических вопросов и формирования профессиональной компетенции.

В качестве заданий можно предложить вопросы, нацеленные на развитие, во-первых, коммуникативной компетенции, что, несомненно, важно для иностранных обучающихся, и, во-вторых, профессиональной компетенции, предполагающей способность использовать базовые теоретические знания современных проблем и новейших достижений физики для решения научных задач, а также применять на практике базовые навыки специалиста. При этом сначала обсуждение происходит на событийном уровне, но постепенно выводится на теоретический. Так, например, в одном из заданий студентам предлагается объяснить, чем вызвано несоответствие возраста героев в начале и конце фильма, и прокомментировать слова Купера: «Когда я вернусь, мы с тобой даже можем быть одного возраста – ты и я. Ты представляешь?» Другое задание проверяет, насколько полезным был просмотр фильма, и позволяет расставить акценты в теоретическом материале: Что вы знаете о гравитации? Что вы узнали о гравитации в фильме? Разные ответы можно услышать на традиционный вопрос о любимом герое: Дайте краткую характеристику герою, который понравился вам больше всего? Аргументируйте свой ответ.

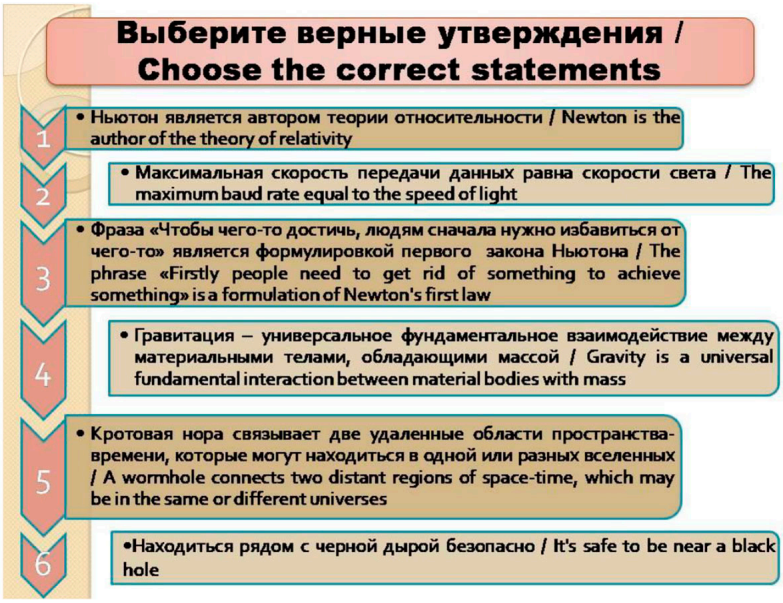

Рис. 2. Пример заданий
Fig. 2. An example of tasks

С интересом студенты выполняли следующие задания: 1) Дочь главного героя зовут Мерфи? Как это имя связано с законом Мерфи? 2) В фильме Купер сказал: «3-й закон Ньютона: чтобы чего-то достичь, людям сначала нужно избавиться от чего-то». Приведите классическую формулировку закона. 3) Как вы понимаете слова профессора Брэнда: «Я не боюсь смерти, я старый физик: я боюсь времени».

Обсуждая проблему образования и изучения черных дыр, мы обращаемся к фрагменту фильма, в котором видим, что, перелетев через кротовую нору, герои попадают в планетную систему возле огромной черной дыры Гаргантюа, эквивалентной сотне миллионов наших Солнц (рис. 3), экзопланеты которой предстоит исследовать на возможную пригодность к жизни. В этом фрагменте фильма стоит акцентировать внимание студентов на то, что герои фильма совершают посадки на планеты для исследования условий жизни. В ходе коллективного обсуждения со студентами данного эпизода можно отметить нелогичность поведения героев, поскольку не было понятно, с какими условиями они столкнутся и существовала ли угроза для жизни и здоровья. Логичнее было проводить исследования с безопасного расстояния, отправив роботов, кроме того, можно было провести спектральный анализ при помощи телескопов для выявления пригодной планеты для жизни. Кроме того, можно предложить поразмышлять над следующей фразой из фильма: «Вы же знаете, Купер, почему в подобные миссии не отправляют роботов? Робот не умеет импровизировать, потому что ему нельзя запрограммировать страх смерти. Наш инстинкт самосохранения – величайший источник вдохновения».

Еще одним важным моментом, на который стоит обратить внимание студентов, является время – один час на планете Миллер равен семи годам на Земле. С точки зрения физики, значительная разница во времени возможна за счет эффекта замедления времени, связанного с вращением планеты, находящейся вблизи орбиты сверхмассивной вращающейся черной дыры, причем скорость вращения должна практически достигать предела скорости вращения. Это реально, хотя и маловероятно.

Логично обсудить замедление времени, вызванное гравитацией сверхмассивного объекта, при этом чем ближе любые часы к нему находятся, тем медленнее будут идти. Можно привести простые и известные примеры. Так, например, ядро Земли фактически на 2,5 года моложе своей поверхности относительно возраста Земли в миллиарды лет (Uggerhøj, Mikkelsen, Faye, 2016), а ноги человека бесконечно мало моложе головы. Кроме того, эффект замедления времени «был непосредственно подтверждён в эксперименте Хафеле-Китинга (Hafele, Keating, 1972), а также в эксперименте Gravity Probe A (Vessot et al., 1980)

Рис. 3. Сверхмассивная черная дыра Гаргантюа. Кадр из фильма «Интерстеллар» (2014)
Fig. 3. Supermassive black hole Gargantua. Frame from the film «Interstellar» (2014)

и постоянно подтверждается в GPS (Ashby, 2003). Гравитационное замедление времени и искривление пространства влекут за собой ещё один эффект, названный эффектом Шапиро, также известный как гравитационная задержка сигнала» (Shapiro, 1964).

Следующим важным фрагментом для обсуждения будет попадание главного героя Купера в гиперпространство – пятое измерение, четыре измерения которого являются пространственными и одно – временным. Более того, герою еще удается передать информацию на Землю. Понятие о физическом гиперпространстве в начале XX века математически обосновал Теодор Калуца, который «ввел новое измерение, поместив четырехмерное пространство ОТО в пятимерное. Учёные допускают существование других измерений, но их познание в трехмерном пространстве не представляется возможным»[5]. И передача информации сквозь черную дыру, как мы выше говорили, невозможна, за исключением излучения Хокинга. Но этот факт также труден для понимания и подтверждения.

Однако сегодня существование гиперпространства под сомнением. Кроме того, возможность попадания в гиперпространство под вопросом, поскольку считается, что гравитация черной дыры настолько сильна, что разрывает на части все, что приближается к ней. Теоретически можно остаться целым и невредимым, применяя принцип эквивалентности полей ускорения и тяготения. Достаточно вспомнить известный мысленный эксперимент Эйнштейна с лифтом – «Лифт Эйнштейна»[6]: «Все предметы внутри такого лифта будут падать вместе с ним с одинаковым ускорением, а их относительные ускорения будут равны нулю. В этом случае ситуацию можно описать в двух системах отсчета. В первой, инерциальной и связанной с Землей, лифт падает под действием гравитации Земли. Во второй, связанной с лифтом (неинерциальной), поля тяготения нет. Если внутри лифта находится наблюдатель, то он не в состоянии определить, в каком поле: ускорения или гравитации, он находится». Получается, что в локальном смысле (когда ускорение свободного падения имеет примерно одинаковые значения в заданной области пространства, то есть гравитационное поле однородно) инерция и гравитация эквивалентны (Saltyk, 2020).

В качестве дискуссии или творческого задания можно предложить следующее задание: Согласны ли вы с финалом, придуманным режиссером? Почему? Если нет, предложите свой вариант окончания этой истории.

Результаты исследования

Исследование проводилось в Институте лингвистики и международных коммуникаций на базе Южно-Уральского государственного университета (научно-исследовательского университета) и в Институте международных отношений на базе Челябинского государственного университета – двух флагманах Южного Урала. В исследовании принимали участие студенты подготовительного отделения технического и медико-биологического профилей из разных стран и разных возрастов (см. рис. 4 и 5) – всего 99 студентов в течение 2 лет – в основном представители арабского мира и стран Африки в возрасте 18–27 лет. Для анализа результатов исследования до и после просмотра и обсуждения теоретических и практических аспектов фильма были применены методы опроса и анкетирования, тестирования. Из обширного анализа литературы были определены основные критерии опроса, такие как построение и организация занятия, техническое оснащение, опыт просмотра фильмов на русском языке, восприятие фильма, мотивация изучения данной темы, роль преподавателя и роль фильма в учебном процессе. Студентам было предложено прокомментировать несколько критериев, результаты анализа данных опроса обобщены и приведены

[5] «Interstellar» s tochki zreniya nauki ["Interstellar" in terms of science]. Available at: https://www.mirf.ru/kino/interstellar-nauchny-film/ (accessed 24 July 2021).

[6] Iz chervotochiny v giperprostranstvo: teoreticheskaya fizika Kipa Torna v fil'me «Interstellar» [From wormhole to hyperspace: Kip Thorne's theoretical physics in "Interstellar"]. Available at: https://lenta.ru/articles/2014/11/18/interstellar/ (accessed 24 July 2021).

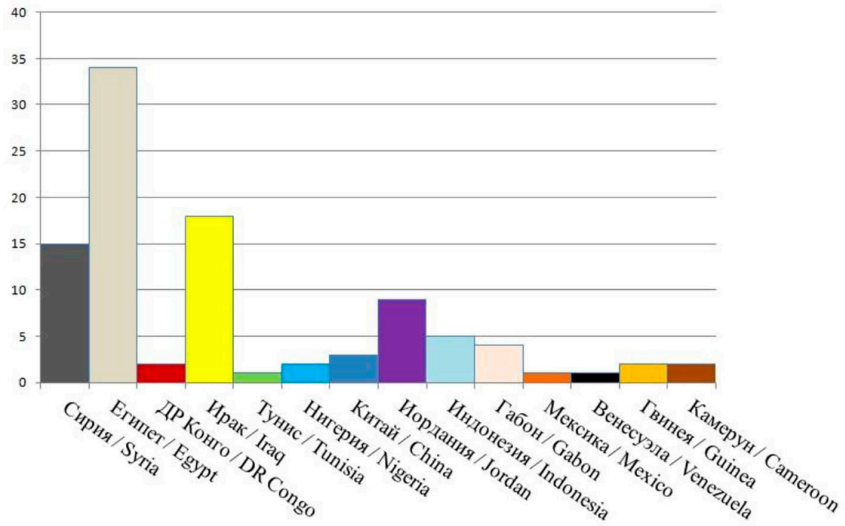

Рис. 4. Количество студентов по странам
Fig. 4. Number of students by country

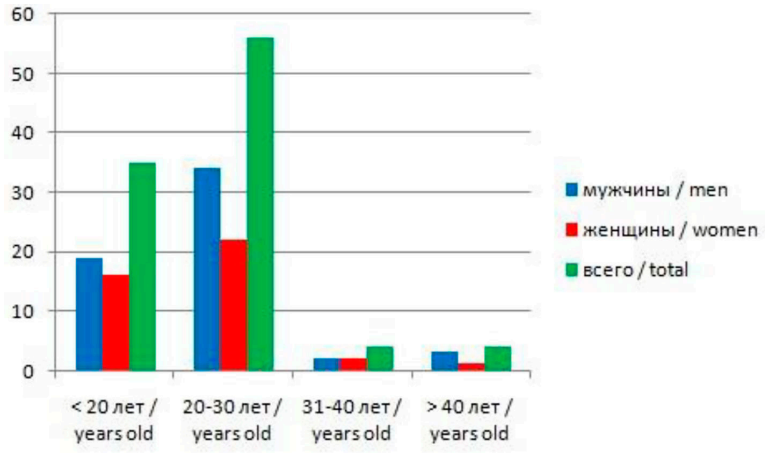

Рис. 5. Студенты по возрастам
Fig. 5. Students by age

в табл. 1. Также была предложена анкета, включающая вопросы с выбором варианта ответа «да-нет», вопросы с несколькими вариантами ответов и вопросы с развернутым ответом.

Анализ результатов опроса и анкетирования подтвердил наши ожидания: большинство студентов согласилось с тем, что просмотр фильма на занятии отлично улучшает его, поскольку появляется дополнительный интерес к изучению темы и возможность сформулировать свою позицию при обсуждении фильма. Многие отметили гибкую структуру занятия, на котором чередуются устные и письменные задания, помогающие позже понять фильм. Большинство подчеркнуло важную роль преподавателя, который комментировал и пояснял трудные моменты как теоретической части занятия, так и просмотровой. Большинство отметило и трудности восприятия фильма, поскольку герои использовали

Таблица 1. Анализ анкетирования
Table 1. Analysis of the questionnaire survey

Критерии / Criterion	Варианты ответа / Answer options	Процент студентов / Percentage of students
1	2	3
Построение и организация занятия / Building and organizing the lesson	Чередование разных заданий (чтение, устные ответы, письменные ответы, аудирование) / Alternating different assignments (reading, oral responses, written responses, listening)	64
	Наличие аудио- и видеоматериалов на уроке / Availability of audio and video materials in the lesson	89
	Возможность пересмотреть фильм в удобное время / Opportunity to watch the film at a convenient time	70
Опыт просмотра фильма на русском языке / Experience of watching a movie in Russian	Я могу свободно смотреть фильмы на русском языке / I can freely watch films in Russian	12
	У меня небольшой опыт просмотра фильмов на русском языке / I have little experience watching films in Russian	68
	У меня нет опыта просмотра фильмов на русском языке / I have no experience of watching films in Russian	6
Техническое оснащение занятия / Technical equipment of the lesson	Возникали проблемы со звуком, видео / There were problems with sound, video	0
	Техническое оснащение полностью удовлетворяет / The technical equipment fully satisfies	95
Восприятие и понимание фильма / Perception and understanding of the film	Смотрю и слушаю легко / I look and listen easily	10
	Отвлекаюсь на картинку и не понимаю смысл эпизода / I am distracted by the picture and do not understand the meaning of the episode	48
	Слушаю часть фрагментов с закрытыми глазами, чтобы понять смысл лучше / I listen to some of the fragments with my eyes closed in order to understand the meaning better	64
	Возникают трудности понимания некоторых эпизодов, но в целом смысл понимаю / There are difficulties in understanding some episodes, but in general I understand the meaning	78
	Ничего не понимаю, всё плохо / I don't understand anything, everything is bad	2
Мотивация изучения данной темы / Motivation for studying this topic	Фильм и задания являются эффективным и полезным способом изучения темы / The film and tasks are an effective and useful way to learn about a topic.	70
	Мне было скучно на занятии, я много не понял, лучше бы читали тексты и слушали преподавателя / I was bored in class, I did not understand a lot, it would be better to read the texts and listen to the teacher	15
	Мне захотелось узнать больше информации по этой теме / I wanted to know more information on this topic.	92
Роль преподавателя в учебном процессе / The role of the teacher in the educational process	Преподаватель чередует разные задания, чтобы информация была более понятной / The teacher alternates between different tasks to make the information more understandable	80
	Преподаватель комментирует фильм, это очень полезно для меня / The teacher comments on the film, it is very useful for me	74
	Преподаватель комментирует фильм, это отвлекало меня от просмотра / The teacher comments on the film, it distracted me from watching	25

Окончание табл. 1
Conclusion of Table 1

1	2	3
Роль фильма в учебном процессе / The role of the film in the educational process	Фильм абсолютно выполняет образовательную функцию, можно смотреть фильмы по каждой теме / The film performs absolutely an educational function, you can watch films on each topic	10
	Использование фильма на уроке не отменяет обычных занятий, хорошо чередовать разные типы уроков (50/50) / The use of a film in the lesson does not replace regular activities, it is good to alternate different types of lessons (50/50)	65
	Фильм лишь дополняет обычные занятия с преподавателем, лекции и практические занятия с традиционными заданиями играют важную роль в процессе обучения / The film only supplements the usual lessons with a teacher, lectures and practical exercises with traditional tasks play an important role in the learning process	70

в диалогах не бытовую, а научную лексику. Часть студентов высказала желание пересмотреть фильм ещё раз дома, чтобы лучше понять некоторые эпизоды. Также значительная доля ответов демонстрировала больший интерес к теме благодаря фильму, отметив, что в случае обычной лекции по такой трудной теме возникло бы, скорее всего, много дополнительных вопросов. Значительная часть ответов демонстрирует, что оценка собственных знаний по заявленной теме после просмотра стала намного выше у большей части респондентов. Подобная рефлексия после традиционных занятий отмечается, как правило, у сильных и части «средних» студентов, остальные же не говорят об изменениях.

Кроме того, учащиеся отметили во время устного опроса, что занятия, включающие просмотр фильма, обладают также следующими достоинствами:

– повышение интереса к теме яркой картинкой;

– необычная форма занятия и интересные задания;

– возможность обсудить важную и актуальную проблему;

– возможность посмотреть фильм с преподавателем и получить пояснение непонятных эпизодов с точки зрения физики.

Из трудностей просмотра фильма на занятии обучающиеся назвали отсутствие субтитров на родном языке и опыта восприятия аудио- и видеоматериала. Это по-прежнему является сложной формой работы. Для развития навыка восприятия и понимания видеоматериала на русском языке необходима коллективная работа преподавателей-предметников и преподавателей русского языка, позволяющая студентам качественнее понимать изучаемый материал.

Опыт создания занятия по физике с привлечением видеоматериала в соответствии с интегративным подходом показал, что интерес учащихся к изучаемой теме значительно возрос, результаты входного (перед изучением темы) и итогового теста существенно улучшились, учащиеся стали свободнее выражать свою позицию и давать оценку увиденному, применяя нестандартность мышления и творческий подход в решении поставленных теоретических и практических задач. Большинство студентов сделали вывод о том, что занятие получилось очень интересным, насыщенным и разнообразным.

Обсуждение и заключения

Демонстрация фильма «Интерстеллар» вызвала большой интерес у студентов: во-первых, в нем представлены проблемы изучения космоса, стоящие перед современной наукой, во-вторых, реальность

тесно переплетается с фантастикой, что создает яркий видеоряд и делает фильм зрелищным. Студенты активно размышляли над научными фактами, представленными в киноленте, выделив среди них теорию возникновения черных дыр, климат на разных поверхностях в космическом пространстве, подготовку космонавтов и их полеты в космос, и эпизоды, созданные фантазией режиссера – пребывание на экзопланете, путешествие через черную дыру, общение главного героя с дочерью через гиперпространство. Интересными стали ответы обучающихся о том, что на месте героев никто не хотел бы оказаться, поскольку в силу малой изученности представленных явлений шансов остаться в живых почти нет. Все пришли к выводу, что фантастическое допущение, показанное в фильме, позволяет держать зрителя в напряжении и дает возможность студентам поразмышлять над данными проблемами и попытаться сформулировать свою точку зрения.

Таким образом, мы можем говорить о том, что демонстрация фильма Кристофера Нолана «Интерстеллар» помогает сформировать у студентов представление о данных астрофизических явлениях, обсудить спорные моменты в киноленте. Об уровне подготовки студентов свидетельствует диаграмма (рис. 6). Во время просмотра фильма студентам требовалось записать термины, которые они услышали. Как мы видим, базовые понятия изучаемой темы (теория относительности, гравитация, кротовая нора, черная дыра) были услышаны и записаны большинством студентов. Дискуссионные вопросы позволили обучающимся продемонстрировать знания по теме, аргументированно доказать свою точку зрения, опираясь на постулаты ОТО, предложить вариант решения проблемы. Так, например, студенты в ходе занятия активно размышляли над фантастическими допущениями (путешествие по кротовой норе, гиперпространство и др.) и выяснили, насколько они правдоподобны и реальны, а также что может стать их альтернативой в реальной науке. В глобальном смысле фильм создает прекрасную возможность для обсуждения самой теории Эйнштейна, является ли она истинно верной, а также возможно ли найти кротовую нору и осуществить путешествие в другие миры.

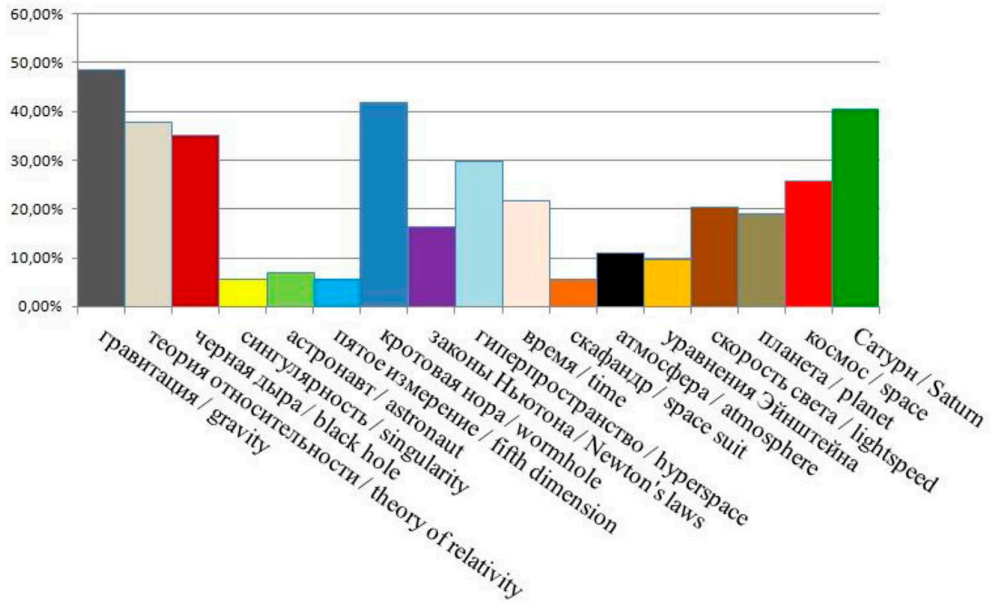

Рис. 6. О подготовке студентов
Fig. 6. About the preparation of students

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Anthropoecology of Sustainable Development and Intelligence as an Adequate Response of Higher Education

Maksim V. Kochetkov[*a, b] **and Olga G. Smolyaninova**[b]
[a]*Fedorovsky Polar State University*
Norilsk, Russian Federation
[b]*Siberian Federal University*
Krasnoyarsk, Russian Federation

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Abstract. The relevance and content of the anthropo-ecological integrating core of the conceptual foundations of sustainable development in order to resist the ideology and social practice of transhumanism are substantiated. In this regard, the efforts of the UN and all countries of the world should be aimed at preserving man as a biological species, as well as the bearer of the best examples of culture and spiritual principles. The necessity of such restrictions for anthropoinnovations, which favor the preservation of a person in his established spiritual and bodily integrity, is substantiated. Anthropoinnovations primarily mean those manifestations of digitalization of a wide range of areas of human activity that potentially restrict his rights and freedoms, neutralize human subjectivity in artificial intelligence. In the educational context, in this regard, the expansion of humanization and humanitarization, psychological and pedagogical support of the social practice of the mentally-bodily and morally oriented existence of a person is relevant. Of particular importance is the formation of the meta-quality of intelligence among the subjects of educational activity, taking into account humanistic values, passionarity, professional and managerial competence, as well as the cultural and spiritual significance of its bearers for the development of society.

Keywords: intelligence, spirituality, passionarity, digitalization, cyborgization, transhumanism, anthropology, ecology, UN.

Research area: pedagogy.

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* Corresponding author E-mail address: m-kochetkov@yandex.ru
ORCID: 0000-0002-5597-6348 (Smolyaninova)

Антропоэкологичность устойчивого развития и интеллигентность как адекватный отклик высшего образования

М.В. Кочетков[a, б], О.Г. Смолянинова[б]
[a]*Заполярный государственный университет им. Н.М. Федоровского*
Российская Федерация, Норильск
[б]*Сибирский федеральный университет*
Российская Федерация, Красноярск

Аннотация. Обоснованы актуальность и содержание антропоэкологического интегрирующего стержня концептуальных основ устойчивого развития с тем, чтобы противостоять идеологии и социальной практике трансгуманизма. В связи с этим усилия ООН и всех стран мира должны быть направлены на сохранение человека как биологического вида, а также носителя лучших образцов культуры и духовных принципов. Показана необходимость таких ограничений для антропоинноваций, которые благоприятствуют сохранению человека в его сложившейся духовно-телесной целостности. Под антропоинновациями подразумеваются прежде всего те проявления цифровизации широкого спектра направлений человеческой деятельности, которые потенциально ограничивают его права и свободы, нивелируют человеческую субъектность в искусственном интеллекте. В образовательном контексте в связи с этим актуально расширение гуманизации и гуманитаризации, психолого-педагогического сопровождения социальной практики душевно-телесного и нравственно ориентированного существования человека. Особую значимость приобретает формирование у субъектов образовательной деятельности метакачества интеллигентности с учетом гуманистических ценностей, пассионарности, профессионально-управленческой компетентности, а также культурной и духовной значимости его носителей для развития общества.

Ключевые слова: интеллигентность, духовность, пассионарность, цифровизация, киборгизация, трансгуманизм, антропология, экология, ООН.

Научная специальность: 5.8.1 – общая педагогика, история педагогики и образования.

Введение

Достижение прорывных инновационных изменений как никогда актуально для России (Kochetrov, 2015). От этого во многом зависит сохранение российской государственности на фоне обострения внутригосударственных и межгосударственных экономических, политических и социально-культурных противоречий. Поэтому реформирование высшего образования (ВО) расширилось задачей создания активизирующих условий для инновационных изменений в экономике и социальной сфере общества (Babintsev et al., 2016; Trubnikova, Trubnikov, 2018; Kim, 2015).

Постоянно нарастающий темп обновления профессионального знания сопровождается цифровизацией как универсальной тенденцией инноваций. Сказанное справедливо и в отношении антропоинноваций: среди направлений модернизации человека как биологического существа (киборгизация, генное и фармацевтическое модифицирование и пр.) интеграция с искусственным интеллектом всё чаще выступает не только как самостоятельное, но и как сопутствующее направление.

Интеграция с искусственным интеллектом (детерминирована цифровизацией) наиболее существенным образом влияет на утрату человеком его субъектности. На идеологическом плане отмеченные антропологические вызовы, прежде всего слияние человека с искусственным интеллектом, во многом подпитываются теорией и социальной практикой трансгуманизма (Avdeeva, Kochetkov, 2022; Il'in, 2018; Kochetkov, Avdeeva, 2021).

Безудержное научно-технологическое преобразование мира и самого человека, безусловно, нуждается в сдерживающих и уравновешивающих факторах. Одним из них является концепция *устойчивого развития*, которая уже продемонстрировала немалый потенциал, находя отражение в национальных программах развития многих государств-членов ООН, в работающих механизмах влияния на производственную политику практически всех заметных на мировом экономическом фоне структур.

Целью настоящего исследования служит обоснование острой актуальности *антропоэкологической интегрирующей задачи* устойчивого развития соответствующих актуальных качеств субъектов образовательной деятельности, где интегрирующим выступает интеллигентность.

Методы

Материалами исследования послужили научные работы современных учёных по проблеме устойчивого развития, а также соответствующие нормативные правовые документы. Актуальные тенденции развития концептуальных основ устойчивого развития представлены в логике факторного анализа. В ходе обоснования актуальных качеств преподавателя и студента основной упор сделан на компетентностном подходе, что справедливо рассматривать как своеобразный факторный метод. Это связано с тем, что компетентностный подход является ведущей образовательной парадигмой в российском образовании. Поэтому исследование проблем в дискурсе компетентностного подхода придаёт результатам исследований определённую «весовую» значимость. Также при выявлении актуальных качеств ключевое внимание уделено позиции наиболее авторитетных учёных, что коррелирует с сущностными особенностями экспертного подхода.

Обсуждение

Устойчивое развитие как мировой тренд подразумевает обеспечение *здорового и благополучного существования человек в интересах грядущих поколений*.

История становления методологических основ концепции устойчивого развития связана с тем, что вначале внимание уделялось решению *экологических* проблем (Sorokina, 2017), то есть тому, как обеспечить сохранение природы и одновременно рост благосостояния жителей планеты, удовлетворить их потребности в комфортном проживании. Поэтому устойчивое развитие в практической плоскости ориентировалось на стабилизацию выбросов парниковых газов в атмосферу, решение проблем развития сельского, лесного хозяйства, охрану генетического, видового и экосистемного разнообразия.

С 80-х гг. XX в. существенно расширяется понимание составляющих устойчивого развития человечества. К рубежу XX–XXI вв. ООН, при достаточно активном участии представителей Российской Федерации, определяет Цели развития тысячелетия (Transforming our world … n.d.). Они включают в себя обеспечение всеобщего начального образования, ликвидацию бедности и голода, содействие равноправию полов и защите прав женщин, улучшение охраны материнского здоровья, сокращение детской смертности, борьбу с ВИЧ, формирование партнерства в целях устойчивого развития, обеспечение экологической устойчивости.

Таким образом, проблемы социального плана существенно расширили спектр проблематики устойчивого развития: наряду с экологией стали выделяться *охрана здоровья людей, удовлетворение первоочередных потребностей населения в странах с низким уровнем душевых доходов* (Nashe obshchee budushchee …, 1989).

Следующим этапом стало существенное внимание правам и свободам граждан в их целостном рассмотрении с социально-экономическим и экологическим благопо-

лучием. Одним из базовых выступил принцип удовлетворения потребностей человека, а заглавными признаками *неустойчивости* стали считаться *экологическая деградация, экономическое неравенство, социальная нестабильность, нарушение гражданских прав и свобод населения* (Bol'shakov, 2011).

Принципы устойчивого развития были определены на состоявшейся в 1992 г. в Рио-де-Жанейро Конференции ООН по окружающей среде и развитию (UNCED) (Declaration of the UN … n.d.). На конференции UNCED обозначены основы первой стратегии устойчивого развития общества, которые нашли отражение в докладе «Повестка дня на XXI век» (The agenda for … n.d.). В первоначальной стратегии особое внимание уделялось управленческим инструментам стратегического планирования (Sorokina, 2017: 71). Правительствам также рекомендовалось *согласовать экономические, социальные, а также экологические дискурсы своих национальных стратегий* в целях создания условий социально ориентированного экономического роста (The agenda for … n.d.). Отмеченные рекомендации остаются в силе и по сей день, им активно следуют практически все страны – члены ООН, что справедливо и в отношении Российской Федерации.

На 70-й сессии Генеральной ассамблеи ООН (25 сентября 2015 г.) на период с 2016 по 2030 гг. были приняты Цели в области устойчивого развития (**ЦУР**) (англ. *Sustainable Development Goals* – SDGs), которые и определяют в настоящее время приоритеты изменения мирового сообщества (Transforming our world … n.d.). ЦУР, в частности, затрагивают проблемы устойчивого развития городов, формирования глобального партнерства в интересах устойчивого развития мирового сообщества, внедрения «всеохватывающей и устойчивой индустриализации», а также обеспечения *инноваций*.

Одна из семнадцати задач ЦУР, под номером 9, заслуживает особого внимания: «*Создание прочной инфраструктуры, содействие обеспечению всеохватной и устойчивой индустриализации и внедрению инноваций*» (About the Sustainable … n.d.). Необходимость инноваций в их рядоположенности со «всеохватной и устойчивой индустриализацией» весьма дискуссионна, так как многие современные инновации абсолютно антагонистичны всеохватной и устойчивой индустриализации. Внутренняя противоречивость 9-ой задачи ЦУР устраняется в том случае, если *инновации* рассматривать как *средство* устойчивой индустриализации, что полностью согласуется с остальными задачами ЦУР.

Отмеченный подход позволяет совсем по-другому посмотреть на антропоинновации, актуализируя в качестве интегрирующей цели и задачи антропоэкологический вектор концептуальных основ ЦУР, призванный противодействовать деструктивным проявлениям антропоинноваций.

Антропоинновации (киборгизация, интеграция с искусственным интеллектом, генная, фармацевтическая, ГМО-детерминированная модификация человека, клонирование) в дальнесрочной перспективе потенциально способны «аннулировать само человечество и его проблемы» (Rakitov, 2018), а в среднесрочной – создают для представителей элиты не только колоссальные преимущества в профессиональных компетенциях, но и неограниченные возможности контроля над «служебными» людьми (Rakitov, 2018; Bolonkin, 2007).

В контексте ЦУР антропоинновации в их сложившихся тенденциях развития уже существенно противоречат сразу нескольким задачам: угрожают самому человеку как биологическому виду (15 задача), усиливают неравенство внутри стран и между ними (10 задача), угнетают проявления субъектности человека, потенциально ограничивают все его права и свободы (16 задача).

В идеологическом плане, как отмечалось ранее, антропоинновации основаны прежде всего на трансгуманизме. По замыслу трансгуманистов, человек может преодолеть страдания, болезни, старение и, наконец, удовлетворит, пожалуй, самое большое желание – бессмертие – благодаря «загрузке сознания» в искусственно созданное тело (Rakitov, 2018; Bolonkin, 2007) (клонированно-биологическое, механическое, облачное, голографическое и т.п.). И тогда

откроется путь к бесконечному машинному прогрессу. Сказанное справедливо было бы интерпретировать как один из многих маловероятных и достаточно иллюзорных вариантов развития общества, если бы не четыре существенных момента.

Во-первых, в условиях мировоззренческого вакуума трансгуманизм, опирающийся на современный научно-технический прогресс, становится очень популярным в молодёжной и в образовательной среде (Katasonov, 2017). *Во-вторых*, это течение остаётся фактически единственной официально признанной идеологией, которая обещает человечеству поступательное развитие (Katasonov, 2017). *В-третьих*, это течение незаметно проникает и изменяет национальные системы образования, во всяком случае это полностью справедливо в отношении России (Kochetkov, Kovalevich, 2020). И, *в-четвёртых*, происходит взрывообразное развитие технологического прогресса в данном направлении, а также имеет место высокая соответствующая заинтересованность властей.

По замечанию В. Н. Катасонова, *на основе только гуманистического материалистического мировоззрения противодействие трансгуманистическому движению обречено на неудачу*. Это детерминировано тем, что в позитивистской парадигме феномен сознания человека вполне ограничивается деятельностью мозга. Поэтому в стремлении технического прогресса к прямой загрузке человеческого сознания в замещающий человека машинный комплекс не усматривается ничего, угрожающего человеку (Katasonov, 2017).

Только характерное для религиозного мировоззрения понимание значимости души для подлинного человеческого существования делает указанное устремление абсурдным и угрожающим (Katasonov, 2017). Оставление душой человеческого тела для традиционных вероучений означает смерть человека, *именно душа является глубинным источником человеческого сознания, эмоций, поведения*. Иными словами, глубинные ресурсы сознания в принципе недоступны информационному моделированию. Вот в чём состоит ключевой барьер для экспансии трансгуманистической идеологии: «*Киборги и постчеловеки, построенные на базе современных научных технологий, будут всегда ниже человека в смысле его высших духовных способностей – творчества, нравственного и морального сознания, восприятия красоты, веры, надежды, любви… Поэтому пропагандируемая трансгуманистами «эволюция» человека к постчеловекам – киборгам, а фактически, замена человека постхьюманами-киборгами будет всегда не развитием, а дегенерацией человека, потерей им тех божественных даров, которые невозможно моделировать в рамках информационных технологий*» (Katasonov, 2017).

Таким образом, исключительно актуальна эволюция концепции устойчивого развития и соответствующие усилия всех государств в антропоэкологическом направлении, когда в качестве заглавной задачи выступает сохранение самого человека в его душевно-телесной целостности в условиях нарастающей стрессогенности жизни в современном обществе, неудержимого технологического прогресса, прежде всего цифровизации, которая становится инструментом утраты свободоспособности многочисленных социальных групп населения, благоприятствует растворению человеческой субъектность в искусственном интеллекте.

Как отмечалось ранее, Российская Федерация всегда активно участвовала в деятельности ООН и её структур по развитию концепции устойчивого развития и внедрению последней у себя в стране. В отношении претворения в практику положений концепции справедливо упомянуть в первую очередь социально ориентированные национальные проекты. Производственной сфере и её технологическому потенциалу на уровне концептуальных документов развития страны также уделяется ключевое внимание. В плане развития информационных систем, цифровизации всех сфер развития общества, действительно, ощущаются значительные практические результаты. Их влияние пока что не достигло критической черты ограничения прав и свобод населения (судя по общественному мнению и дискурсу научных публикаций на эту тему).

Существенное внимание в российском обществе отведено и духовному фактору. Так, в Указе Президента от 24 декабря 2014 г. № 808 «Об Утверждении Основ государственной культурной политики» экономическое процветание рассматривается в причинной взаимосвязи с культурным и гуманитарным развитием, гуманным отношением к человеку.

Однако в целом, несмотря на некоторые позитивные моменты, реалии российского социума вряд ли позволяют говорить о его устойчивом развитии, в том числе и в антропоэкологическом аспекте. Тенденции развития, прежде всего темп цифровизации всех сфер общественной жизни, свидетельствуют о нарастающем антагонизме инноваций по отношению к актуализированному нами антропоэкологическому направлению эволюции концептуальных основ ЦУР.

Недопущение нарастания отмеченного антагонизма составляет сложнейшую социально-политическую и экономическую проблему. Вряд ли в настоящее время и в будущем её решение возможно без определённых существенных усилий общественности, в связи с чем логично обратиться к системе образования, учитывая её опережающий характер в формировании нужного обществу гражданина.

Даже достаточно бегло знакомясь с педагогическими публикациями, нетрудно заметить, что неизменно высокую привлекательность для исследователей всегда составляла нормативная модель качеств субъектов образовательной деятельности. Проведённое исследование привело нас к неутешительному выводу – несмотря на огромную многоаспектность составляющих многочисленных моделей, они не адекватны антропоэкологическим вызовам времени, антропоэкологической задаче как главенствующему целеполаганию ЦУР.

Вот один из примеров требований к современному *специалисту в области образования*: он должен быть модератором; разработчиком образовательных траекторий; тьютором; организатором проектного обучения; координатором образовательной онлайн-платформы; ментором стартапов; игромастером; игропедагогом; тренером по майндфитнесу; разработчиком инструментов обучения состояниям сознания (Polupan, 2017: 46).

Касательно же конкретно *преподавателя высшей школы*, то у него должны быть сформированы следующие профессиональные компетенции: «системное мышление; умение изобретать методические инновации; способность применять необходимые технологические приёмы в зависимости от формируемой компетенции, от этапа её формирования, от содержания дисциплины (модуля); умение внедрять и использовать игровые тренинги или их элементы; владение мультикультурной коммуникацией (не менее двух языков); интеграция научных исследований в образовательный процесс в быстроменяющихся условиях; персональная ответственность за результат обучения; высокий уровень сформированности коммуникативных навыков; владение технологией управления проектной деятельностью; умение использовать во внеаудиторной работе онлайн-курсы, онлайн-платформы для обогащения учебного пространства; знание профессиональных стандартов и ориентированность на «заказ потребителя»; навыки формирования индивидуальной траектории и организации опережающей подготовки; планирование карьерного роста и профессионального развития; оперативное реагирование на изменения в структуре профессиональной деятельности» (Polupan, 2017: 47).

Из других источников следует ещё обязательно добавить способность преподавателя не только к разработке современной производственно и социально ориентированной инноватики, включая патентование и публикацию в высокорейтинговых изданиях, но и развитие пространства «вуз – инновационное производство» с такой предпринимательской компетентностью, которая обеспечила бы высокую прибыль инновационных товаров и услуг, вовлечение во всё перечисленное студентов, в том числе иностранных.

Среди необъятного перечня обоснованных для преподавателя и студента актуальных компетенций и компетентностей, безусловно, можно найти те, которые коррелируют с антропоэкологическим аспектом ЦУР. Одна-

ко мы считаем, что такая корреляция должна быть выраженной, она должна «пронизывать» все направления деятельности преподавателя, оттенять все его качества.

Спектр компетентностных моделей преподавателя и студента за последние двадцать лет расширился настолько, что его анализ составляет сложнейшую исследовательскую задачу. Оставим без комментариев внутреннюю противоречивость и соответствие реальным условиям для профессиональной деятельности подобных нормативных моделей. Ведь достаточно очевидно, что преподаватель просто не в состоянии проявить себя во всех направлениях деятельности идеальным образом, да и сложно ожидать в реальной жизни от кого-то идеальных качеств. Сказанное актуализирует разработку таких нормативных моделей педагога, которые характеризуются иерархичностью значимости его характеристик, некими интегрирующими составляющими, метаориентирами изменения индивида, его качеств, способностей, компетентностей.

Понятия «качества», «способности» и «компетентности» синонимичны. Их отличие кроется в коннотациях. Так, понятие компетентности сегодня в отечественном образовании прочно ассоциируется с *компетентностной образовательной парадигмой*. Федеральные государственные образовательные стандарты, весь образовательный процесс с его принципиальной ориентацией на диагностируемость и регламентированность базируются именно на компетентностях и компетенциях. Понятно, что указанное долженствование нередко весьма условно и многие специалисты осознают его принципиальную нереализуемость, когда речь идёт о духовно-эмоциональных качествах, в связи с чем и появились так называемые *гибкие (или мягкие) навыки* (англ. *soft skills*). Не случайно они характеризуют прежде всего *надпрофессиональные* навыки, то есть не связаны с узкопредметной областью деятельности тех же преподавателя и студента.

Учитывая эвристический потенциал надпрофессиональных компетенций и компетентностей, мы решили сфокусировать исследовательское внимание исключительно на *метакачествах* преподавателя и студента. Именно они призваны придать нормативным моделям специалиста в области образования, в том числе представленным ранее, новое осмысление, связанное с актуальными вызовами времени. При этом исходным стал следующий тезис чл.-корр. РАО Р. М. Асадуллина: «… *компетенции – это всего лишь внешнее выражение способностей человека и качеств его как личности. Существуют более фундаментальные качества людей и жизненные установки, которые выражают направленность компетенций и силу их выражения*» (Asadullin, 2019: 110).

Таким требуемым качеством, на наш взгляд, в условиях инновационно-ориентированной социокультурной реальности, в том числе антропоинноваций, является *интеллигентность*.

Академик РАО Д. С. Лихачёв считал понятие интеллигентности чисто российским, при этом отмечая, что содержание его имеет преимущественно ассоциативно-эмоциональную основу (Lihachev, 1993), обусловлено умственным трудом и «умственной порядочностью», профессионализмом, широкой образованностью, творчеством, силой духа и непродажностью во всех отношениях (включая идеологическую конъюнктуру и экономические выгоды), свободой как нравственным устоем («не свободен интеллигентный человек только от своей совести и от своей мысли») (Lihachev, 1993). Отмеченные характеристики согласуются с тем, что «в основе интеллигентности как личностного качества лежит сочетание ценностного отношения к жизни, восприимчивости ко всему новому, толерантность к инаковому, социальная ответственность» (Kazakov, 2015: 48).

Интеллигентность тесно связана с устоявшимися гуманистическими ценностями, пассионарностью в её неотделимом единстве с интеллектом, культурой и управленческо-профессиональными характеристиками представителей общества. Именно данные проявления интеллигентности в условиях существенной неопределённости прогнозов на будущее, а также современные тенденции открытого многоуровневого описания социокультурных процессов могут способствовать

выявлению и устранению многих деструктивных явлений (*античеловеческие инновации, коррупция, бедность населения, неравенство перед законом, выраженная несправедливость при распределении общественных благ и национальных ресурсов, катастрофическая экологическая ситуация, бездуховность, утрата традиций и национально-культурных достижений, самобытности, экономической самодостаточности*).

Интеллигентность как метакачество по отношению к иным профессионально-личностным качествам преподавателя и студента релевантна позиции многочисленных учёных относительно того, что основу интеллигентности составляет признание человека в качестве высшей ценности. А это, по мнению Л. А. Келеман, наделяет интеллигентность универсальным смыслом (Keleman, 2014), как раз и центрирующемся на самоценности человека, всей совокупности его телесно-душевного бытия, что является принципиальным моментом в противодействии трансгуманистическим тенденциям в обществе.

Концептуальное осмысление интеллигентности как желаемого метакачества преподавателя и студента предполагает соответствующие трансформации социокультурной среды как на уровне учебных заведений, так и на уровне социального пространства страны. Не вдаваясь в исследование состояния и перспектив существования такой среды, отметим, что в настоящее время, по мнению ряда учёных, социокультурная среда вуза пока ещё сохраняет в себе потенциал развития преподавателя и студента согласно тем характеристикам, которые связаны с интеллигентностью (Babincev, 2014). Противодействующее влияние оказывают псевдоинновационные явления в вузе (Kochetkov, 2014), формализация и унификация вузовской среды, бюрократизация деятельности преподавателя и студента (Babincev, 2014), прагматизация их отношений, что, в частности, согласуется с положениями ФЗ «Об образовании», согласно которому деятельность преподавателя отнесена к сфере услуг (Kochetkov, 2017).

Выводы

Становление концептуальных основ устойчивого развития, практика реализации странами – членами ООН соответствующих целей и задач оказывают в настоящее время существенное влияние на мировые экологические, социально-политические и экономические процессы. Нарастающий темп научно-технического прогресса в условиях жёсткой конкуренции между странами, транснациональными образованиями, культурами, идеологиями актуализирует в отношении социальных и производственно ориентированных нововведений эффективные сдерживающие и гармонизирующие механизмы. Особую угрозу будущему человечества представляет инноватика на основе идеологии трансгуманизма, прежде всего цифровизация всех сфер жизни общества, особенно её влияние на «растворение» человеческой субъектности в искусственном интеллекте.

В связи с этим актуальна эволюция концептуальных основ устойчивого развития, активизация соответствующих усилий ООН и всех стран мира в антропоэкологическом направлении (ему свойственны самоценность человека в его телесно-духовной целостности в соответствии с лучшими образцами культуры, устоявшимися гуманистическими традициями, высокими духовными принципами). Интегрирующим качеством преподавателя и студента вуза, которое соответствует антропоэкологическим тенденциям изменения концептуальных основ устойчивого развития, выступает интеллигентность. Интеллигентность в обществе проявляется в пассионарности гражданина, его гуманистически ориентированных акцентуациях поведения, высокой профессионально-управленческой компетентности, свободоспособности, а также социальной и духовной значимости носителей данного качества для представителей рассматриваемого социума.

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The Comparative Analysis of Treatment of Environmental Issues in Three Primary School Textbooks for Ethnic Koreans Residing in China: Korean Language, Morality and Rule of Law, Character and Society

Dabin Kang* and Isaac Lee
University of Queensland
Brisbane, Queensland, Australia

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Abstract: This research analyzed the environmental content in three series of textbooks published for Chosunjok (ethnic Koreans in China). This paper examines the treatment of environmental topics in three series of textbooks for three subjects: Korean language, Morality and rule of law, and Character and society. Findings show that the textbooks included material regarding water pollution, air pollution and soil pollution. In the case of water pollution, the books present garbage dumping, industrial waste, lack of water and domestic wastewater as the only causes of water pollution. Chinese education authorities selectively select the environmental problems to show them as global issues rather than specifically China's issues. In the case of air pollution, textbooks depict four environment issues: global warming, emission of industrial pollutants, vehicle emission and burning of crops. Regarding soil pollution, the books claim that the perpetrators of soil pollution are farmers rather than factories or companies, who are the actual culprits. None of the texts place any blame on the Chinese government or dominant groups for focusing on economic development to the detriment of the environment, nor do they portray any cases of environmental pollution in China. Overall, the textbooks educate only about general global pollution and promote the interests of dominant groups by selectively favoring particular environmental texts.

Keywords: Environmental Education, Textbook Analysis, Environment in China, Environmental Pollution, Chosunjok (Ethnic Koreans).

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* Corresponding author E-mail address: d.kang@uq.edu.au

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Сравнительный анализ освещения экологических проблем в трех учебниках для начальных классов для этнических корейцев, проживающих в Китае: корейский язык, мораль и верховенство закона, характер и общество

Д. Канг, И. Ли
Университет Квинсленда
Брисбен, Квинсленд, Австралия

Аннотация. Проанализировано экологическое содержание в трех учебниках, опубликованных для этнических корейцев в Китае. Рассмотрено обращение к темам окружающей среды учебников по трем предметам: корейский язык, мораль и верховенство закона, а также характер и общество. Результаты показывают, что учебники включали материал, касающийся загрязнения воды, воздуха и почвы. По загрязнению воды в книгах представлены мусорные сбросы, промышленные отходы, отсутствие воды и бытовые сточные воды как основные причины загрязнения. Китайские органы образования выбирают экологические проблемы, чтобы показать их как глобальные, а не как проблемы Китая. По загрязнению воздуха в учебниках отмечены четыре проблемы: глобальное потепление, выбросы промышленных предприятий, выбросы транспортных средств и сжигание сельскохозяйственных культур. Что касается загрязнения почвы, книги утверждают, что виновниками здесь называют фермеров, а не фабрики или компании, реально загрязняющие среду. Ни один из текстов не возлагает вину на правительство Китая или доминирующие группы за то, что они сосредоточены на экономическом развитии в ущерб окружающей среде, и не показывают никаких случаев загрязнения окружающей среды в Китае. В целом учебники рассказывают только об общем глобальном загрязнении и затрагивают интересы доминирующих групп, избирательно отдавая предпочтение конкретным экологическим текстам.

Ключевые слова: экологическое образование, анализ учебников, окружающая среда в Китае, загрязнение окружающей среды, Чосунджок (этнические корейцы).

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Introduction

Since the implementation of the Reform and Opening-up Policy in 1978, China has shown high levels of economic growth, which has resulted in serious environmental problems, making it necessary for China to devise a method to balance economic growth with environmental sustainability. During this time of rapid economic growth, China currently claims 4 of the 20 most polluted cities in the world: Beijing, Chengdu, Shenyang and Wuhan (World Air Quality Index (AQI) Ranking, 2021). Due to such serious environmental pollution problems, people have become conscious of the importance of protecting the environment and their health (Han, 2015). China faces serious environmental problems, which are costing lives and also leading to a slowdown in economic growth. To offset these dual effects, the Chinese government is stressing the implementation of environmental education from primary to university levels. By enacting the *Environmental Protection Law of China* in September 1979, environmental education (EE) was introduced to primary and secondary schools in selected provinces and cities ("Environmental Protection Law of the People's Republic of China (1989)," 2004)

Education is known to be a very powerful tool which impacts both citizens and students. In particular, textbooks, which play a major role in the school curriculum, influence the formation and legitimation of ideologies, norms, and values of government (Lee, 1999; Lee, 2013).There are ample instances where political leaders have presented their own selected versions of knowledge and cultural viewpoints and norms. Many scholars, such as Apple (2004); Lee (2013); Liu (2005a) have found that the early literacy content of school textbooks served the interests of the ruling and elite classes, as well as their cultural values and norms. Political leaders often legitimize their own ruling ideologies using school textbooks. The government policy, *Implementation Guideline on Environmental Education for Primary and Secondary Schools* by the Ministry of Education, specified that all disciplinary subjects must integrate EE (Zhou, 2018). This policy has since also been applied to education of minorities in China.

In China, there are 56 ethnic minorities, and each ethnic group has an independent curriculum designed to maintain their own culture and language. At the same time, local education authorities are required to comply with the guidelines of the PRC government (Sude et al., 2020). Therefore, schools for these 56 ethnic minorities are also obliged to integrate EE in their respective curricula. The Chosunjok (ethnic Koreans) are the 13th largest group of the minorities. They are widely recognized as a 'model' minority, and mostly live in three provinces in the north-eastern part of China (Gao, 2010). Under the establishment of New China, Chosunjok have been educating their students with their own curricula, though they still follow the PRC government guidelines. This project examines how the textbooks used in Chosunjok primary schools have integrated environmental issues into the curriculum and will show how EE is implemented through textbooks.

1. Background of EE in China

Since China opened its doors to the wider world in 1978, the economy has witnessed tremendous growth. Its gross domestic product has surged from less than $ 150 billion in 1978 to $ 14.34 trillion in 2019 (Song et al., 2019). On the other hand, China's environment has been on a path of serious deterioration. China's environmental problems (including outdoor and indoor air pollution, water shortages and water pollution, desertification, and soil pollution) have become more pronounced and are subjecting Chinese residents to significant health risks (Imura, 2013). The Chinese government is beginning to focus on environmental issues and has embarked on the strategic transformation from economic development alone to both economic and environmental development in building an energy-saving and environment-friendly society (McBeath, 2014). Environmental issues in China have important implications not only on the domestic level but also on a global level, since the amount of carbon dioxide emitted by factories in China is huge, and seriously affects neighboring countries such as Korea and Japan. Hence, such countries pay attention to China's handling of transboundary

environmental problems and note what efforts China is making.

China's engagement in environmental education can be traced back to the 1970s. A few selected primary and secondary schools incorporated environmental education into different subjects gradually over the 1980s and 1990s (Qing, 2004). In 2003, *Guidelines for the Implementation of Environmental Education in Primary and Secondary Schools*, released by the Ministry of Education of PRC (MEPRC), formally required nationwide efforts to integrate environmental education into the curricula and activities of primary and secondary schools (Han, 2019).

Since the National Environment Education Guidelines (approved in 2003), the MEPRC has confirmed its commitment that China's students learn about environmental and sustainable development. The guidelines guarantee that the environment is now an essential part of the national curriculum, and emphasize the development not only of knowledge, but also of students' skills, attitudes and values towards forming a sustainable future (Curdt-Christiansen, 2021). The Guidelines apply to all Primary and Middle school students in China and stress three goals: (1) offer courses on EE as an independent disciplinary subject; (2) fully integrate EE into all school curricula; (3) offer teacher training; and (4) conduct research on EE pedagogies (Yudan et al., 2019).

Environmental education was widely used in the 1960s in terms of natural learning. However, since the Tbilisi Conference in 1977, the need for including environmental education into formal education systems in primary and secondary schools has been emphasized (Unesco, 1980). This was the first stage of applying EE worldwide and the start to the adaption of EE in formal curricula. In the 2000s, under the influence of the UN's "10 years for education for Sustainable Development", it became more specific – from EE to Education for Sustainable Development (ESD). This began the transition from EE to ESD (Kopnina, 2012).

ESD is obviously more expansive than EE. EE emphasizes the importance of the traditional approach of environmental protection, ignoring the way environmental and economic development coexist, whilst ESD pursues sustainable development, including environmental protection as well as economic and social development (Aguilar, 2018). ESD is defined as education that encourages change in knowledge, skills, values, and attitudes to enable a more sustainable and equitable society. ESD aims to support current and future generations to meet their needs using a balance of economic growth and preserving the environment (Cockerill, 2013).

Whilst most studies have explored EE policy and implementation in the mainstream in various countries, not many studies have been conducted using textbook analysis regarding EE in minority textbooks (Stevenson et al., 2016). Previously, scholars such as Iwaniec and Curdt-Christiansen (2020); Liu (2005b) and Liu (2005a) have analyzed textbooks to explore the integration of EE in Chinese national language textbooks. Their analyses were limited to Chinese language textbooks and did not investigate other disciplinary textbooks or minority groups. Therefore, it is important to investigate EE in diverse subject areas developed for minority groups in China (Kopnina, 2014). Thus, this research will examine how China's EE and ESD are implemented in the Chosunjok (ethnic Koreans) primary textbooks.

2. Methodology

Primary schools in China are divided into lower grades (grades 1–3) and upper grades (grades 4–6). The subjects relevant to this study are Korean Language (KL), Morality and Rule of Law (MRL) an1d Character and Society (CS). Three series of primary school textbooks which were published in 2016 by Yanbian Education Publishing House were analyzed. The school curriculum consists of two semesters per grade, with each subject having two textbooks per grade. KL and MRL are taught from the 1st to 6th grade, but CS is a 4th to 6th grade subject. Thus, this study analyzed 12 KL, 12 MRL, and 6 CS textbooks. The environment-related content in the three subjects was analyzed by dividing the environmental issues, with the content analysis being based on the most recently published textbook of the Korean-Chinese primary

school curriculum. The environmental analysis was classified into each environmental issue: water, soil and air pollution.

This paper also adopts the concept of environmental literacy from the North American Association for Environmental Education (NAAEE), which defines environmental literacy with seven frameworks: Affect, Ecological knowledge, Socio-political knowledge, Knowledge of environmental issues, Cognitive skills, Additional determinants of environmentally responsible behaviour (ERB), and Environmentally responsible behaviour (ERB) (Hollweg et al., 2011) (Simmons, 1994). An explanation of each of the seven detailed frameworks follows.

(1) Affect

Recognizing environmental problems at the individual level and taking an action to actively participate in environmental protection

(2) Ecological knowledge

Referring to the knowledge and understanding of how natural systems interact with society

(3) Socio-political knowledge

Including understanding of economic, social political and ecological interdependence in society

(4) Knowledge of environmental issues

Understanding of various environmental problems and issues

(5) Cognitive skills

Abilities of selecting proper action strategies for environmental protection

(6) Additional determinants of ERB

Locus of control that is an individual's perception of people's ability to bring about change as a result of their actions.

(7) ERB

Action through selected lifestyle activities, including environmentally proper consumption, assisting enforcement of environmental regulations.

Putting these two levels of analysis together, thematic classification and environmental literacy, research use the following questions to confirm the understanding of how environmental problems are provided to form a student's perspective,

Research Questions:

1) What types of environmental literacy (environmental themes) are depicted in the textbooks?

2) Whose interest/ideologies do the content in textbooks serve?

3) What are the systematic omissions and for what purpose?

3. Findings

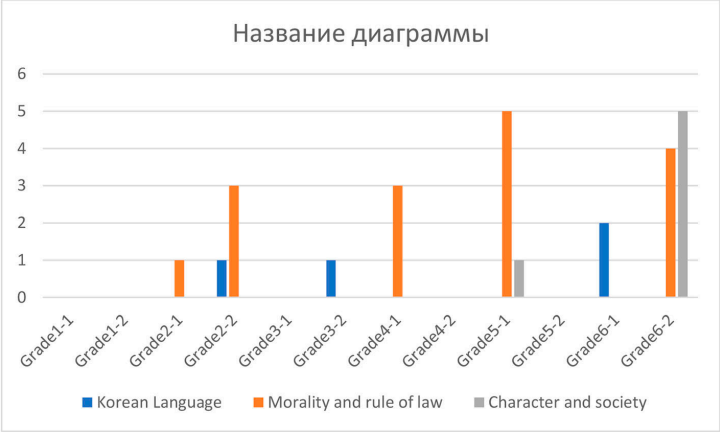
The content of the three textbooks is analyzed as follows in the table below.

The numbers indicate the frequency of references in the textbooks of each theme. The texts relating to the environmental issues were divided into three sections, which were water, air, and soil pollution. This was done by analyzing the textbooks for the three subjects (KL, MRL, CS). In Table 1, if texts or visual images included more than one environmental issue, they were included into multiple issues when categorized. To examine the texts based on the themes, critical discourse analysis and story grammar will be used, while for images, visual image analysis will be used. Also, this research analyzes the concept of environmental literacy, the ultimate goal of environmental education, which refers to citizens who have knowledge,

Table 1. Environmental issues (themes and texts)

Major Environmental themes					
Water Pollution		Air Pollution		Soil Pollution	
Garbage dumping	2	Global warming	2	Agricultural pesticides	2
Industrial waste	5	Emission of industrial pollutants	3	Domestic waste (plastic bags)	6
Lack of water	2	Vehicle emission	2	Industrial waste	2
Domestic wastewater	4	Burning crops	1	Deforestation	3
Total	13	Total	8	Total	13

Table 2. The classification of environmental issues in three textbooks distributed by grade



skills, values and attitudes regarding environmental problems, and have the ability to participate in environmental problem solving (Volk and Macbeth, 1998).

The content of environmental issues varies depending on subjects and grade. The details are illustrated below in Table 2.

It can be seen that as the grade goes up, more environmental texts are introduced in the textbooks. The textbooks for grade 4 do not include any environment issues in CS, and those for grades 4 and 5 KL also do not include any environment issues. As (Thoma, 2017) pointed out, the content is structured with consideration of the academic level of learners from the perspective of students. EE is found in grades 2, 3 and 6 in KL textbooks, in grades 2, 4, 5 and 6 in MRL, and in grades 5 and 6 in CS.

The following shows the analysis for each category of pollution:

1) Water pollution

Regarding water pollution, the texts introduced issues of garbage dumping, industrial waste, lack of water and domestic wastewater. Among them, water pollution due to industrial waste was the most frequently mentioned, followed by domestic wastewater as demonstrated in Table 1. Page 31 of 6–2 MRL[1] introduces Minamata disease, caused by industrial waste in Japan.

1. In the 1950s, a Japanese fertilizer company in the Minamata region discharged untreated wastewater into the sea.

2. These wastewaters contained mercury, which is harmful to the human body and severely pollutes both the sea and fish.

3. As a result, both people and animals that ate these contaminated fish were poisoned…

4. The poisoned cats convulsed crazily, jumping into the sea to commit suicide. In just a few years, it was difficult to see cats in the Minamata area.

5. Later, affected people also started to increase with the symptoms being similar to those cats.

6. At the time, people did not know the cause of the disease and named it the 'Minamata disease'.

The story grammar of the text is: setting (line 1: Minamata in Japan); protagonist (line 1: a Japanese fertilizer company); cause (line 2: wastewaters contain mercury); consequences (lines 3, 4, 5: Minamata disease broke out, so people and animals were poisoned); didactic lesson (don't discharge untreated industrial wastewater). The textbook reinforces the importance of controlling industrial waste as it can cause serious problems directly related to human health. However, the textbook writers provide the example of the Japan Minamata case that occurred 70 years ago. Despite many

[1] 6–2 means Grade 6, Semester 2, while MRL refers to Morality and Rule of Law

recent cases of environmental pollution caused by industrial waste in China, the textbook writers chose an old industrial waste case from another country as an example. They selected this story to demonstrate the after-effects of water pollution. Yet this leaves questions to the readers on why the textbook integrated an old foreign case, almost as if China does not have such sea pollution caused by industrial waste. This could imply to students that only other countries are the cause of environmental problems.

Because of the severe environmental pollution caused by industrial waste, Article 42 of the Environmental Protection Law of the People's Republic of China was cited in the 4–1 MRL (p. 79)

> *Enterprises, public institutions and other producers and business operators that discharge pollutants shall take measures to prevent and control the environmental pollution caused by waste gas, wastewater, waste residues, dust, malodorous gases, radioactive substances and noise, vibration and electromagnetic radiation generated during production, construction, or other activities.*
>
> *<Environmental Protection Law of the People's Republic of China, Article 42>*

Through this environmental law, it can be inferred that environmental pollution and damage caused by companies, enterprises, public institutions or business units account for a large proportion of China's pollution. However, no penalties are specified in the above provisions of the law; there is just information that environmental pollution caused by industrial waste must be prevented.

The second most mentioned cause of water pollution was domestic wastewater. The following story, "Blue Sea", was adopted from Korean language textbooks in South Korea (Lee, 2020).

> 1. My younger brother drew a picture, and he painted the sea with a red color.
>
> 2. Then my father said that a dirty sea looks red.
>
> 3. "Because people do not value the sea and throw away trash.
>
> 4. We pollute the sea with shampoo and soap that we use every day.
>
> 5. If we use shampoo and soap in small little amounts, the sea will become cleaner…"
>
> 6. I thought that I should use less shampoo and soap to make the sea blue…

The story "Blue Sea" (pp. 130–132) in the KL textbook portrays the severity of water pollution in the sea. The first line draws out curiosity about why the sea is colored red. The narrator's father explains why the sea appears red, as explained in line 2. Lines 3 and 4 explain the cause of the sea pollution, which in this case was throwing away trash and using shampoo and soap. However, such actions do not pollute the sea to the extent where it changes the color of the sea red. The story also suggests ways of solving the problem, such as using less shampoo and soap in their daily lives, as shown in lines 5 and 6. By using the personal pronoun 'we' in line 4, it suggests to students that they are all responsible for the pollution of the sea, and as a result, the students are encouraged to use less shampoo and soap (in line 6). Yet the sea's color won't change into blue unless significant actions are taken to reduce industrial wastewater. The textbook omitted this fact, instead blaming citizens using shampoo and soap for water pollution.

Also, the text from the 5–1 CS (p. 29) presents students' reports of river pollution in a village and water pollution due to industrial and domestic waste. The images indicate Chinese students, because they are wearing red neckties. Here line 2 states that wastewater pollution comes from chemical plants.

- Cause of contamination:

1. There is no garbage disposal plant near the river, so residents around the river throw out garbage.
2. Wastewater of chemical plant is discharged to the river without treatment.

- Actions being taken in town:

The waste problem along the river coast is already being targeted by the municipal government and the chemical plant is trying to install sewage treatment facilities.

• Our suggestions and action:

It is suggested to the relevant department to install a fixed waste disposal plant in the residential area of wastewater discharge from chemical plants.

The textbook writers stress that actions to solve the wastewater from chemical plant are already being taken now. Students also suggest that the government department install a waste disposal plant in the residential area near the wastewater discharge from chemical plants. It is recommended that the supervision of chemical plant wastewater be strengthened. These proposals can be seen to reflect the current situation in China.

The story "Calcination of water droplets" (pp. 34–37) in the 2–2 MRL textbook portrays water pollution resulting from garbage dumping and a lack of water.

This story explains that a part-time water supply was adapted due to a water shortage. The water drop says "Some people don't care for me (water) at all. Sometimes they throw away trash and pour out rubbish filth on me" (p. 34). However, there is no actor specified – the story uses the generic "some people". Instead of pointing out the main culprit of water pollution, the textbook writers ascribe that pollution to 'some people' without saying who they are. In addition, the story also portrays 'rubbish filth' as the cause of water pollution while avoiding mention of industrial wastewater. Further, water droplets are personified with the use of the word "me". Using first person pronoun "me" helps readers to identify themselves with the narrator (Lee, 2020). In such a way, authors of the textbook encourage students to indirectly feel the pain they are suffering as a victim. Further, the writers reinforce what students need to do for the environment. For example, "While I take a shower, I don't keep the water running. The water for washing the fruit can be kept in a basin and used again" (p. 37). Overusing water is undeniably one of the reasons for water shortages. Although there are other major causes, such as construction of dams, massive development of urban spaces, and desertification, they were all omitted here.

2) Air pollution

In China, air pollution is widely considered the biggest problem amongst all other environmental problems. China's air quality is very low. Three out of four city dwellers live with air that is below China's air quality standard (Delang, 2016). A major cause of air pollution is the increasing output of industrial waste gases. Ever since a clean-air policy was implemented in 2013, air pollution has steadily decreased across China, and Chinese cities no longer dominate the top cities for the most polluted cities list (Xu, 2020). The causes of air pollution are listed in the textbooks, and they include industrial pollutant emissions, burning crops, vehicle emissions and global warming.

Firstly, the story "Earth suffers from high fever" (pp. 88–91) in the MRL textbook 4–1 introduces the concept of global warming. The textbooks introduce several problems that occur when high temperature weather persists for an extended period. In page 88, there is a question proposed to students, "Do you know what symptoms show that the Earth suffers from high fever?" Here, using the plural "symptoms", writers of textbook establish that there are many consequences of global warming. "High fever" indicates a critical stage of global warming. Furthermore, page 89 of the textbook shows the three images below, that weather disasters such as floods and drought are becoming more severe due to climate change.

Although not visible outright, images 1 and 3 above relate to environmental damage caused by global warming. Yet melting ice-

Table 3. Cause, Consequence and Solution of water pollution

Cause	Consequences	Solution
Throwing away trash and pouring out rubbish filth in water	Only provides part-time water supply due to shortage of water/ cows and sheep are gone	Do not keep the water running during showers and wash fruit in a basin to keep the water

Fig.1. Melting icebergs caused by global warming
(2013, MRL textbook page 89)

Fig. 2. Global warming has caused severe drought in some parts of the planet
(2013, MRL textbook page 89)

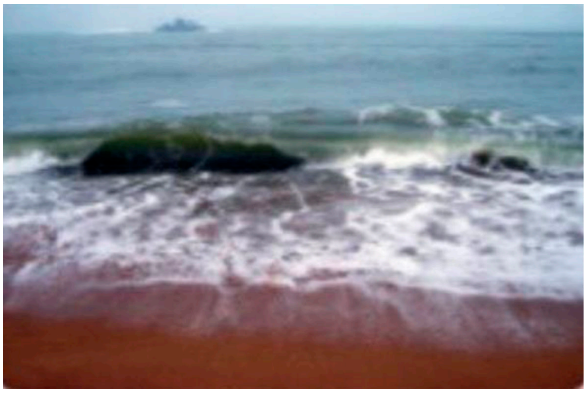


Fig. 3. Land area has decreased due to rising sea levels
(2013, MRL textbook page 89)

bergs and losing land due to rising sea levels are not problems found in China. The title of image 2 states severe drought as a problem in "some parts of the planet", not as a problem in China. By selecting images that seem unrelated to China, the authors are misleading students to think that environmental problems are all foreign issues, and that China is not directly affected or implicated.

The cause of abnormal climate is explained on page 90 in the textbook from the monologue of the greenhouse gas.

> *The monologue of the greenhouse gas follows below.*
>
> *1. Hello! We are 'greenhouse gases'. We make up the Earth's atmosphere layer.*
>
> *2. Sunlight passes through the atmosphere layer and is absorbed by the surface, and the surface radiates heat back to the atmosphere layer. This heat is absorbed by us and remains in the atmosphere layer to maintain the temperature of the air.*
>
> *3. However, because modern people are constantly making friends just like us, the balance of the atmosphere has been destroyed*
>
> *4. As we have more and more friends, we absorb more surface heat, so it becomes more like a glass door in a greenhouse, making it difficult to dissipate heat.*

In the text above, the 'greenhouse gases' greet students and explain the phenomenon of global warming. Using personification "we" and "us" in lines 1, 2 and 4, the greenhouse gases effectively express the difficulties that they are facing to students. Using passive voice, "the balance of the atmosphere has been destroyed", the authors of the textbooks have omitted the agents who destroy the balance of the atmosphere. By just saying "modern people" are the culprits of generating greenhouse gases (in line 3), the story avoids specifying the real people or companies involved. However, it is obvious that not all modern people are culprits, while many of them are in fact trying to protect the environment. Also, the story states euphemistically that they "are constantly making friends just like us". Additionally, using the collective and personal pronoun "we", the textbook stresses that blame for greenhouse gases is shared by many people in the world. Further, using the expressions "more and more friends" once and "more" twice in line 4, authors of the textbooks are stating that there is an increasing amount of greenhouse gases that is worsening global warming.

To illustrate some of the four issues of air pollution, the following two images on page 40 of *MRL* (2–2) are introduced; they show emission of industrial pollutants in Image 4 and Burning Crops in Image 5.

Air pollution in China is occurring in cities due to urbanization, with several factors: an enormous economic boom, an upsurge in the use of vehicles, population growth, and output from manufacturing (Ma & Ma, 2017; Xu, 2020). Despite this, the textbook provides the image of a farmer burning crops in the countryside as one of the two major causes of air pollution. In this way, the authors are portraying farmers as culprits of major air pollution (image 5). Image 4 depicts giant stacks emitting smoke and fumes directly from factories into the atmosphere, admitting that industrial waste gases are also culprits. Yet no human agents are depicted in Figure 4. The only people held responsible are the farmers.

Furthermore, Article 26 of the Constitution of the People's Republic of China is introduced in the textbook.

> *The state shall protect and improve living environments and the ecological environment and prevent and control pollution and other public hazards. The state shall organize and encourage afforestation and protect forests.*
>
> *<Constitution of the People's Republic of China> Article 26.*

Article 26 shows constitutional evidence that China officially pays attention to environmental protection. The Article promises the following:

> 1. *protect and improve living environments and the ecological environment*
>
> 2. *prevent and control pollution and other public hazards*

Fig. 4. Output of industrial waste gases
(2013, 2–2 MRL textbook page 40)

Fig. 5. Burning of crops
(2013, 2–2 MRL textbook page 40)

3. *organize and encourage afforestation and protect forests.*

Yet it does not mention how the state should achieve the goals.

Lastly, the story "The promise for everyone" (pp. 30–31) in the KL textbook discusses the air pollution due to vehicle emissions.

Conversation between Jiyoon and teacher

Background: Today, Jiyoon's school went on a bicycle-riding field trip. At that moment, a green bus passed by the bike path, but the green bus did not emit any smoke.

1. Jiyoon: "Teacher, that bus doesn't emit any smoke. It's amazing."

2. Teacher: "That's an electric car. Electric cars don't emit bad smoke like cars that use petrol."

3. Jiyoon: "Is petrol bad?"

4. Teacher: "If petroleum burns as fuel, it can make cars move and you can make a variety of daily necessities with materials extracted from oil. However, using too much oil pollutes the environment. Environmental pollution causes great damage to not only people but also to nature. That is why people should try to reduce pollutants."

5. Jiyoon: "What kind of efforts should we put in?"

6. Teacher: "Do not throw away trash and recycle a lot of resources. You need to have the habit of riding a bicycle in areas of proximity and using public transportation like buses or subways."

7. Jiyoon: "It would be helpful to not use a lot of air conditioning in summer, right?"

8. Teacher: "Right! Jiyoon! That is a very good idea."

9. Jiyoon: "Teacher, I will try to protect the environment starting today."

10. Teacher: "Jiyoon! You made a promise for all of us"

This is a conversation between Jiyoon and a teacher. This story explains that using electric cars prevents emitting the bad smoke that causes environmental problems. Line 4 lists the problems caused by using too much petroleum. To emphasize that petrol pollutes the environment, the story uses words such as "bad smoke" in line 2 and "great damage" in line 4. The teacher explains that electric cars do not produce 'bad' smoke, unlike regular cars. By using the descriptor 'bad', the textbook connotes that it is not good to use cars that use oil petroleum. In line 5, Jiyoon asks how they can solve the problem and her teacher explains the ways (line 6). The teacher recommends four solutions to the student: riding bicycles, recycling, not throwing trash and using public transportation. In line 7, Jiyoon asks whether it is good to not use a lot of air conditioning during summer, and the teacher responds to her question by giving positive responses, "right" and "a very good idea" in line 8. In this way, the teacher normalizes not using a lot of air conditioning in summer as one of the ways to protect the environment that is practical for a student. In response to the teacher's recommendation, Jiyoon promises to make efforts protect the environment from today. "A promise for all of us" (line 10) indicates that Jiyoon's decision to protect the environment is for all of us (for everyone's good). This encourages the readers to also participate in the teacher's recommendations, as well as to feel a sense of shared responsibility to protect the environment (Curdt-Christiansen, 2016).

3) Soil pollution

The textbooks depict four causes of soil pollution, which are introduced as: pesticides, plastic bags, industrial waste, and desertification. "Let's find out about white pollution" (pp, 72–75) in 4–1 MRL describes the pollution due to plastic bags. Page 72 illustrates the environmental problems caused by plastic bags. "Let's find out about white pollution" includes the line "In everyday life, you can see vinyl products everywhere". This indicates that the use of vinyl products can be easily found anywhere in China and implies that there is an environmental problem of white pollution because of plastic bags.

On page 73, "The plastic bag drifter" is introduced.

1. I'm a white plastic bag... As I floated leisurely and reached the sky above the fields, the farmer looked at me angrily and said, "Never sit down in our field".

2. With regret, my dry corn brother sighed and complained to me saying, "Hey, plastic bag, many of your friends are buried in the ground at my feet and it's hard for me to get nutrients and fluids. I am still hungry, so I hear a rumble…"

3. My face turned red; I left the field in a hurry. I flew and flew to a beach.

4. There was a whale that was breathing hard. What happened? When people examined the whale, it was found to have swallowed many plastic bags, which resulted in clogged organs, further resulting in malnutrition, and later starvation to the point of death…

The textbook portrays two consequences of plastic bags polluting farming areas and oceans. Line 2 has the dry corn complaining, using the phrase, "many of your friends". The writers of the textbook describe the seriousness of plastic bag pollution with the plural "many". They illustrate one victim, dry corn, which mentions that it could not get sufficient nutrients from the ground because of the 'white

pollution'. Line 3 shows that causing this pollution is shameful, as demonstrated by the plastic bag in the sentence "My face turned red, I left the field in a hurry". Additionally, in line 3, using the pronoun 'I' has the effect of presenting the narrator's view to the readers (Uzum et al., 2018). Furthermore, in the story 'plastic bag' is explaining its own story directly to students by using personification. Personification can help readers understand, sympathize with, or react emotionally to non-human characters (Flannery, 2016). Therefore, it helps students to understand the environmental problems caused by the plastic bags that people use in their daily lives. This story also demonstrates that plastic bags cause maritime pollution and the death of whales (in Line 4) which indicates their severe negative impact on sea as well as land.

After introducing the serious problem of plastic bags, the textbook integrates the solutions by providing an example of other countries' cases (page 74). The first story is "Packaging ordinance" which explains the rule that was implemented in Germany in 1992, stipulating the recycling rate of waste packaging and forcing manufacturers to take responsibility for the collection and disposal of their products' packaging. Another case is given – the Irish government reduced the use of plastic bags by requiring consumers to pay a tax levy when they asked for plastic bags at stores. Similarly, the textbook emphasizes that China also introduced "Restriction on the use of plastic bags" on the 1st of June 2008. This law limits the production, sale and use of plastic shopping bags for retail purposes. The ordinance also banned the production, retail and use of any plastic bag under a thickness of 0.025m. As a result of the policy, first, bags are reused more frequently than before; and second, more substitutes are used, meaning that more goods are placed in containers other than plastic bags (He, 2012).

Due to soil pollution caused by household waste (such as plastic bags), pages 83–85 of the 4–1 MRL suggest recycling as a solution.

Three solutions to reduce household waste are presented, along with images of recycling. Adding these images makes the texts more effective, as they demonstrate and make real the

Fig. 6. Recycling
(2013, 4–1 MRL textbook page 83)

actions that students can take to eliminate soil pollution.

Soil pollution due to the increased use of chemical fertilizers and pesticides in agricultural areas in China is central. China uses one-third of the world's chemical fertilizers. Pesticide sales have been on the rise since 2016, and ever since, there has been a serious problem in the destruction of the agricultural ecological environment (Chen & Ye, 2014). In addition, in 2014, agricultural land contaminated with pesticide residues occupied 40 % of the nation's agricultural land, making the problem of pesticide pollution a serious social issue (Li et al., 2014). Pollution caused by these chemical fertilizers and pesticides are introduced in MRL.

Page 77 of the MRL (4–1) textbook provides examples of agricultural pesticides that students have found in their daily lives. It also introduces the consequences of the excess use of pesticides.

"I saw the vegetables my grandmother bought soaked in water for a long time"

> *"My mother told me to eat the fruit after peeling the skin off. This is because pesticides may remain on the peel of the fruit."*
>
> *"I saw the fish in the river near the paddy dead after applying pesticide to the paddy field" (p. 77).*

The three main consequences of non-scientific usage of pesticides are introduced on page 77.

> • Must wash vegetables for a long time to get rid of chemical pesticides
>
> • Cannot eat fruits with peel
>
> • Fish in the river near the paddy killed.

The following page suggests the solutions. Page 78 explains the way to reduce the pollution of pesticides by students with the following:

> • reducing the excessive use of pesticides,
>
> • using government approved pesticide products, and
>
> • using them strictly according to the instructions.

We have analyzed three distinct forms of pollution, but there are some combinations of these that are depicted in the textbooks.

The story "Earth is getting harder" (pp. 26–29) in 5–2 CS textbook introduces the fact that a large amount of industrial waste and deforestation is caused by various environmental problems. The text on pages 26 and 27 explains the causes and consequences of pollution (Table 4).

Table 4 shows that acid rain is caused by waste gas. Acid rain not only corrodes buildings but also adversely affects forests, fish and farms. In China, air pollution is becoming more and more serious and the concentration of fine dust in the air is also increasing. These fine dusts are included as causative agents of acid rain (Thorjoern et al., 2006). The story depicts those fertile lands as turning increasingly to desert due to large amounts of garbage. Yet, there are many other causes of desertification other than garbage dumping, and it is an error of generalization to list only garbage dumping as a major cause of the problem. This omits the other problems of unreasonable land use, such as excessive arable clearing and grazing, which are the main causes of desertification in China.

After introducing the problems caused by industrial waste, the textbook presented writing activities, which are Earth's letter to mankind and mankind's letter to Earth (page 26). In the writing activity, the authors use personifications such as "lung" (forests and wetlands), and "blood" (river, lakes, oceans), and "skin" (soils), to enhance the compassion that the students will feel with the agony of Earth. After the students recognize the problems caused by industrial waste and garbage dumping, the activity of writing a letter to Earth will encourage them to treat Earth as they would a human being. Earth is not an agent that can do anything for the environmental issues. Such writing activities could increase the affection students feel for the earth, but there can be no response. Perhaps it would be better if the textbooks encouraged students to write letters to actual stakeholders/companies which pollute the environment in China or in other regions.

4. Conclusion

We have analyzed three subjects within the field of environment issues from three series of textbooks. Our analysis will answer the research questions.

Table 4. Causes and Consequences of Environmental pollution

Cause	Consequences
Emissions from factories	Produces acid rain in the atmosphere
Large amount of wastewater	Fish death / water pollution
Large amount of garbage on the ground	Desertification of agricultural land

Research Question 1: What types of environmental literacy (environmental themes/contents) are depicted in the textbooks?

Among the seven environmental literacy components, ***Affect*** can be confirmed in the environmental text from "promise for everyone". A student makes decisions, such as using public transportation and bicycles, and reducing use of air-conditioning, to reduce air pollution and global warming. In addition, using less shampoo and soap were listed as solutions for sea pollution, and not keep water running during showers was suggested.

In the framework ***Knowledge of environmental issues****,* diverse issues of water pollution, air pollution and soil pollution are depicted. These three forms of pollution are exemplified by garbage dumpling, industrial waste, release of domestic wastewater, industrial chemical wastewater pollution, global warming, emission of industrial pollutants, vehicle emissions, burning of crops, agricultural pesticides, domestic waste (plastic bags), industrial waste and deforestation.

For ***Socio-political knowledge***, the textbooks introduce environmental protection laws twice and provide one case for action for municipal government to take for water pollution, but there is no mention of punishment for not complying with the laws. Although political institutions and regulations can play an important role in environmental protection, punitive action must be seen as a possibility, with potential legal action being laid out clearly.

As for ***Ecological knowledge***, global warming is well presented. The cause of global warming is claimed to be deforestation, and as a result, the amount of carbon dioxide in the air is increasing. ***ERB*** is adopted in the issues of plastic bags. Text introduced regulation of plastic bags as implemented in other countries, such as Germany and Ireland. These regulations could be applied in China but the text just hints at the benefits of regulation. ***Additional determinants of ERB*** and ***Cognitive skills*** are not depicted in the textbooks.

Most of the solutions for environmental pollution are presented according to *Guidelines for the implementation of environmental Education in Primary and Secondary Schools* of MEPRC. They stress that textbooks should present environmental content which students may be able to actively participate in environmental protection and practice in daily life. However, students could do more. For instance, students writing letters to factory owners or Lord Mayors of each city could promote more interest in protection of environments, but the textbooks only depicted writing a letter to the Earth. Thus, China's real environmental problems were rarely introduced.

RQs 2 and 3: Whose interests and ideologies do the content in textbooks serve? & What are the systematic omissions and for what purpose?

The textbooks studied here serve the interests or ideologies of Chinese rulers or government, factory owners, and the ruling class. Three characteristics can be found in the texts. First, various causes of environmental pollution are introduced, but actual cases that happened in China are mostly omitted. Instead, textbooks, such as (1–2), selected an old story of water pollution that occurred in Japan in the 1950s while intentionally ignoring China's cases. This creates the impression that China is not experiencing the environmental problems that other foreign countries face. In such a way, selected school knowledge is depicted in a manner congruent with the interests and ideologies of the government and upper class of China. If textbooks depicted actual cases occurring in China, students would be able to understand what kind of environmental problems China is facing and would think about what they could do and how they could contribute to protecting the environment. The earlier (younger) they are educated and engage with environmental issues, the earlier they can develop a sense of ownership and responsibility for the environment they live in (Ideland, 2018).

Second, texts mis-portray the main culprits of environmental pollution. When introducing the causes of air pollution in China, the images containing human agency are only of farmers burning crops, implying that farmers are the main creators of air pollution. There are few mentions of factory owners or of those in powerful groups who are actually the main culprits.

Third, the textbooks show closed text, not allowing students to ask critical questions and leaving them with no choice but to accept the direction provided. From the texts, the message is that all students should listen to the textbooks as they would listen to their and teacher's voice. Students are not given opportunities to exercise critical thinking around issues of environmental protection.

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The Flipped Classroom in the Context of Digitization of Educational Space: A Students' Perspective

Tatyana I. Gromoglasova*[a], Marina I. Kovaleva[a], Zhanna V. Koshkina[a] and Laura Huffman[b]
[a]*Novosibirsk State University of Economics and Management*
Novosibirsk, Russian Federation
[b]*U.S. Department of State, English Language Program*
Washington, USA

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Abstract. The COVID-19 pandemic has presented a challenge to educators and administrators around the world, forcing them to find effective methods for distance learning using the best methods and technologies available. The digitization of educational spaces in higher education is one of the key factors that impact learning and teaching processes at the university level in these modern times. An excellent method of reaching these academic goals with online and blended formats is to implement the flipped classroom model. We believe this method holds merit and conducted a study with the aim of evaluating how effective this model is for our General English course students at our university. The focus of the research is from our students' perspectives, and thus, the issues under consideration include: students' general experiences and attitudes towards distance language learning using the flipped classroom, their experiences of using digital tools and resources as a medium for learning, and their perception of how the flipped classroom model has developed their 4C skills (communication, collaboration, creativity, and critical thinking). The article discusses the concept of the flipped classroom with details on the principles of its design, structure, strategies and techniques for a foreign language course. We also explore the categorization of digital tools and resources that can be integrated into the flipped classroom model. In addition, close attention is given to the development of the 4Cs as the main skills of the 21st century. The insights and implications derived from the study are reflected in recommendations that will be helpful for language teachers at the university level.

Keywords: the flipped classroom model, digitization of educational space, digital learning tools, distance language learning, 4C skills.

Research area: pedagogy.

* Corresponding author E-mail address: t.i.gromoglasova@nsuem.ru

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Технология перевернутого класса в контексте цифровизации образовательного пространства: взгляд студентов

Т.И. Громогласова[а], М.И. Ковалева[а], Ж.В. Кошкина[а], Лора Хафман[б]

[а]Новосибирский государственный университет экономики и управления Российская Федерация, Новосибирск

[б]Государственный департамент США, Отделение английского языка Вашингтон, США

Аннотация. Пандемия COVID-19 стала вызовом для преподавателей и руководящего состава университетов по всему миру, поскольку возникла острая потребность в поиске эффективных методов и технологий для осуществления образовательного процесса в дистанционном формате. Цифровизация образовательного пространства вузов выступила ключевым процессом, повлиявшим на учебную деятельность в этот период. Данная статья посвящена исследованию состоятельности технологии перевернутого класса для дистанционного изучения дисциплины «Иностранный язык». Здесь обсуждаются принципы разработки занятий в рамках указанной технологии и их структура, приводится классификация цифровых образовательных инструментов и онлайн-ресурсов, которые могут быть интегрированы в модель перевернутого класса. Кроме того, особое внимание уделено потенциалу обсуждаемой технологии для развития таких ключевых навыков XXI века, как 4C (коммуникация, командная работа, креативность и критическое мышление). Исследование выполнено в рамках студентоцентрированного подхода: авторы анализируют данные студенческих анкет об опыте дистанционного изучения иностранного языка с использованием технологии перевернутого класса, предпочтения студентов относительно цифровых инструментов и онлайн-ресурсов как средств обучения, а также восприятие того, насколько модель перевернутого класса способствует развитию навыков 4C. Полученные результаты исследования нашли отражение в методических рекомендациях для преподавателей иностранных языков в вузе.

Ключевые слова: модель перевернутого класса, цифровизация образовательного пространства, цифровые инструменты обучения, дистанционное обучение иностранным языкам, навыки 4C.

Научная специальность: 5.8.1 – общая педагогика, история педагогики и образования.

Introduction

The process of digitization of educational spaces in universities was forcibly accelerated due to the COVID-19 pandemic which had a tremendous impact in the field of higher education on a global scale. When the pandemic hit, in general, universities were not prepared for the challenge of shifting from face-to-face classes to the online format. A huge effort had to be made by institutions and lecturers by the way of pedagogy and technology in order to effectively continue teaching. (Mosquera, Suárez, Chiyón & Alberti, 2021). Higher education was pressured to choose more flexible, active, student-centered and technology-based teaching strategies that mitigate the limitations of traditional transmittal models of education and correspond to the principles of innovative teaching technologies used for distance learning (Gromoglasova, 2018; Kovaleva, 2019). Never before has there been such an urgent need and demand for reforming traditional teaching in higher education. Educators around the world have been searching for effective methods of distance learning. As such, the flipped classroom approach has been widely suggested to support this transition (Nouri, 2016). The methodology of the flipped classroom helps solve many of the inevitable problems we are facing in the transition to online and blended learning. We can safely say that the flipped classroom is an innovative strategy that suits the demands of higher education in the context of digitization of educational space.

It should be mentioned that integrating the flipped classroom into the curriculum of today's universities requires a substantial amount of effort and cooperation from lecturers, administration and even students. When implementing the flipped classroom model at various levels of higher education it's very important to know students' needs and expectations. However, the analysis of papers published by foreign and Russian academics shows a considerable lack of research regarding students' perceptions of the flipped classroom in an online ESL course, although it's been well established that this technology offers contemporary solutions to current pedagogical problems. Academic research into student perceptions and the effectiveness of the flipped classroom is relatively limited at present, with the majority of commentary coming in the form of informal weblogs and the like (Pudin, 2017).

The aim of the study is to examine how students perceive learning with the flipped classroom in an online ESL course and to provide practical recommendations for effective construction of the online flipped classroom. Three particular aspects are considered, namely, (a) students' general experiences and attitudes towards distance language learning using the flipped classroom, (b) students' experiences of using digital tools as a medium for learning, and (c) students' perception of how the flipped classroom model has developed their 4C skills: communication, collaboration, creativity, and critical thinking.

Theoretical background

To begin with, some conceptual prerequisites of the flipped classroom model were undertaken in the 1890s by scientists such as A. King and E. Mazur. The idea of flipping a classroom was discussed in the beginning of the 21st century by J.W. Baker, M. Lage, G. Platt, and M. Treglia (Gnutova, 2020). Then, the flipped classroom was first implemented by Jonathan Bergmann and Aaron Sams, who developed and created many educational videos to help their students understand the main concepts of new lessons and clarify the ambiguity of topics, developing students' learning throughout by imitating their real-life situations (Aljaraideh, 2019). In 2007, they recorded their lectures on video for the first time and posted them on the network for students who missed lessons. It sparked a widespread debate about implementing this model in teaching different subjects (Bergmann and Sams, 2008; Gannod, Burge, & Helmick, 2008; Tucker, 2012; Roach, 2014).

Initially popularized in the United States, the flipped classroom model in higher education has been discussed by Russian scientists since 2014 (Kuzmenko &Bazhenov, 2014; Kurvits M. & Kurvits J., 2014; Litvinova, 2014). Although today many academics around the world are debating the key issues of flipped classrooms in the context of digitization, there

isn't much research concerning teaching ESL in Russia in this perspective.

Pedogogists explain that the flipped classroom model replaces teacher-led in-class instructions with individual homework or group activities. Chernysheva O.V. states that the flipped classroom is the most appropriate kind of blended learning where the educational process becomes 'flipped' (Chernysheva, 2020). According to DeLozier and Rhodes, the flipped classroom is characterized by course structure: the instructional content is assigned as homework before coming to class. In-class time is then spent working on problem areas, advancing concepts, and engaging in collaborative learning. (DeLozier & Rhodes, (2017). Flipped classrooms integrate digital technologies, allowing the teacher to implement the restructuring and reorganization of teaching materials in both synchronous and asynchronous modes. The facilities of the flipped classroom approach can be accessible from anywhere, either in real time or after the fact (Prodromou, 2017).

It should be pointed out here that the role of the instructor in flipped learning is based on guiding and organizing the activities and skills, whereas the students' roles are developed through certain techniques such as self-learning, preparing lessons at home and getting ready for discussion inside the classroom (Aljaraideh, 2019). The main idea of the flipped classroom implies that theoretical knowledge could be learned at home via video or a recorded lesson online. The teacher creates opportunities for individual learning and the development of students' 4C skills doing exercises, projects, group discussions, brainstorming, and other types of activities. As a result, the flipped classroom model is student-centered and provides additional supporting materials and functions as in the "real world".

The flipped classroom can be implemented for developing different ESL skills: pronunciation, listening, speaking, reading, writing and grammar. However, these days these skills simply aren't enough. If today's students want to compete in our globalized workplace, they must also be proficient communicators, creators, critical thinkers, and collaborators (the 4 C's). Educators must complement all of the subjects with 4C skills to prepare young people to function as productive citizens and enter the global workforce (Erdoğan, 2019). There is no doubt that not only are communication, collaboration, creativity and critical thinking skills the main skills of learning and innovation in the 21st Century, but that they are effectively developed when teaching ESL in the online flipped classroom.

At the same time, there is an ongoing debate about the benefits and weaknesses of the use of the flipped classroom in higher education. The advantages of the flipped classroom model are numerous and they have made the technique popular all over the world.

Advantages to the flipped classroom:

- The flipped classroom frees up actual class time for more effective, creative and active learning activities, teachers receive expanded opportunities to interact with and assess students' learning, and students take control and responsibility for their learning (Nouri, 2016)
- The flipped classroom leads to increased student-to-student interaction (Jaster, 2017)
- The flipped classroom contributes to teachers' pre-service learning, skills, and affective development, specifically by creating a meaningful and authentic context for learning (Cabi, 2018)
- Teachers meet the learning needs of diverse student cohorts by customizing the curriculum and offering personalized teacher-to-student mentoring and peer-to-peer collaboration (Tomas, Evans, Doyle and Skamp, 2019)
- The flipped classroom is more enjoyable and fun than the traditional teaching approach, and students are keener to learn (Ngo & Md Yunus, 2021).

The disadvantages to the flipped classroom:

- A decrease in satisfaction with training, as well as a low technical proficiency of teachers which prevents the high-quality design and presentation of the developed lectures (Antonova & Merenkov, 2018)
- Some students are unable, or unwilling, to complete the class assignments, some students are unable to solve basic problems, even after taking notes (Jaster, 2017)

- Grading for the flipped classroom can be time consuming (Jaster, 2017)
- Students might fail to comprehend the learning content when watching videos at home (Hwang, Yin, & Chu, 2019)
- The significant time is spent on the materials by the teacher; students demonstrate bad time management (Gavrilova, 2020)
- Many teachers have little to no experience in this field, either technically or pedagogically.

To gain some insight on students' perspectives on the online flipped classroom, we decided to conduct our own poll. The results were fascinating.

Methods

To accomplish the goals of the study, at the initial stage an exploratory design was employed to define the strategies and principles for the construction of the flipped classroom model for the General English program. The data for qualitative and quantitative analysis was gathered through a questionnaire with both open and closed questions addressing our students' overall impression of the flipped classroom experience and use of digital tools and resources. In addition, the Likert-scale questionnaire was designed to evaluate the level of the students' 4C skills before and after the course.

Participants

The participants were second year students at Novosibirsk State University of Economics and Management majoring in International Relations. The total number of participants was 110, which included 79 females and 31 males, ranging in age from 19 to 22 years old, with a mean age of 20 years. Students did not have any flipped classroom experience prior to this course.

Course structure

The flipped classroom General English course was implemented during the spring semester of the 2019/2020 academic year and both the autumn and spring semesters of the 2020/2021 academic year. Although the transition to distance learning has changed the learning environment significantly, the main objectives of the General English course stayed the same: to develop language and communicative competencies and skills, with a special focus on the 4Cs of the 21st century skills (communication, collaboration, creativity, and critical thinking).

To satisfy the needs of the course the authentic course book *Keynote Upper Intermediate*, published by National Geographic Learning Publishing, was selected as it contains specially selected tasks aimed at mastering communication, collaboration, critical thinking, and creativity. Additionally, the course includes the use of TED Talks and thought-provoking native texts which develop the skills and literacies needed for meaningful communication.

The flipped classroom method requires that students learn new material before class, and, consequently, they have an opportunity to actively participate in different activities aimed to develop and master what they have learned while actually in class. The general understanding of the new material is assessed, preferably before the class, with subsequent assessment during or after the class, using different instruments. Implementing such an ordered approach allows students to understand the importance of completing the pre-class tasks, as these learning materials are highly reinforced with in-class and after-class work.

In developing the curriculum and assessing outcomes for this course, we have gained insight and found solutions to the following methodological problems: which activities to choose for pre-class, in-class, and after-class work, how to motivate students to complete pre-class tasks, how to bridge the gap between pre-class work and in-class work, how to connect the exact tasks and activities with the final outcomes, all the while managing not to overload students with too much material.

For each lesson plan, the chosen activities were specially selected and matched to Bloom's taxonomy, which classifies learning objectives into levels of complexity according to the degree to which they develop different thinking skills using six levels from lower to higher-order thinking skills. For pre-class activities matching lower-order thinking levels, tasks

that required remembering and understanding were selected. To engage students 4C skills in-class and after class, activities corresponding to higher-order thinking skills like applying, analyzing, evaluating, and creating were chosen.

Procedure

Firstly, prior to online lessons, students were given instructions and access to the materials and tasks to complete before the class. Communication with the teacher was held in a social networking group created solely for the class, where students could ask the teacher questions and communicate with each other. Among the main media content were YouTube videos, TED Talks, BBC materials, and others. Pre-class activities included: watching topic-related videos, TED Talks, or series, completing video-based tasks, creating questions about the text or story, vocabulary and grammar-chunks exercises as well as comprehension checking assessments. Such activities focus on recognizing and recalling grammar and vocabulary chunks, defining keywords, summarizing and explaining information.

The in-class session began with feedback from students on their pre-class work, which usually took no more than 15 minutes. Class time was typically used to discuss any questions, work in pairs and groups on projects, activities and creative tasks designed to enhance communication, collaboration, critical thinking, and creativity. Students were given a variety of different higher-order thinking skill activities, from applying to creating: peer assessment activities, role-playing, presentation of a joint project prepared outside of class, performing a TED talk watched before the class, and answering the audience's questions. Pair and group work also included different discussions about the videos, TED talks, shows, and series watched before the class, retelling the texts or videos, asking and answering spontaneous questions about the plot as well as preparing thought-provoking questions, working on the vocabulary in pairs and groups: for instance, collaborating on a search for the definitions and the context for the key vocabulary, making up sentences and stories with keywords, and etc.

Finally, students were given higher-order thinking skill after-class activities which reinforced the previous material. These tasks included completing a final assessment, creating and posting a recorded, topic-related video in the Google Classroom, watching additional TED Talks, digging deeper into a related topic, posting written work and peer assessments in Padlet, individual or group research, and project work with a presentation during the next lesson.

Digital tools and resources

There were numerous digital tools and resources that helped us effectively flip the classroom during this course study. They can be generally classified into: digital communication platforms, web services, learning management systems (LMS), social media, videoconferencing applications, audio and video devices and programs, e-assessment tools, online dictionaries, corpus-based web tools, and other resources. Participants actively used the following trademarked programs and software: Zoom video conferencing, YouTube, Vkontakte social network, Google Classroom and other Google instruments, Canvas, Kahoot, Padlet, TEDTalks, BBC Learning English, iSLcollective, Tube Quizard, YouGlish, online English dictionaries, SKELL engine for language learning, and others. Alongside enhancing 4C skills, using these digital tools was aimed at personalizing learning and developing each student's digital literacy.

Survey instruments

To examine how students studying our General English course perceived flipped classroom learning, a questionnaire was developed and sent to 110 university students using Google Forms. The questionnaire consisted of the following sections and topics:

- Section A: students' general attitude towards flipped classroom learning, experience and implemented activities, the advantages and disadvantages of the method;
- Section B: students' experience of using digital tools as a medium for learning;
- Section C: students' perception of how the flipped classroom learning method has developed their 4C skills.

In Section A the following questions were asked:

– Open questions about the students' overall impressions towards flipped classroom learning;

– Open questions about the advantages and disadvantages of the flipped classroom model;

– A closed question asking the student to mark the pre-class activities that students appreciated doing the most;

– A closed question asking the student to mark the in-class activities that students appreciated doing the most;

– A closed question asking the student to mark the after-class activities that students appreciated doing the most;

– Closed questions asking the student to mark the pre-class, in-class, and after-class activities they felt developed their 4C skills (communication, collaboration, creativity, and critical thinking).

The choice of the last three aforementioned questions is particularly relevant because according to the core principle of the flipped classroom method there should be a clear distinction and meaningful connection between the activities done before, in and after class.

Section B contained questions about the usage of digital tools in the flipped classroom. The students specified the tools they liked the most, gave the reason why and chose the types of activities that helped them develop their 4C skills.

Additionally, before and after the study, students were asked to evaluate their 4C skills using a 5-grade scale (Section C of the questionnaire).

Results and discussion

(a) Views and attitudes towards the flipped classroom model in distant learning

Our survey has shown that students' overall impression of the flipped classroom experience during a distance learning program is positive (94 %). 6 % of the students stated they could not describe their experience as something qualitatively different from language learning in the offline format. Fig. 1 provides a visualization of the most frequently mentioned advantages of the flipped classroom that the students mentioned when giving feedback after the study.

Among the benefits that the students pointed out, the flipped classroom model can provide the opportunity to improve self-management skills including time-management, self-motivation, goal setting, and self-reliance; the opportunity to save time on the commute to the university; a comfortable, less stressful environment for studying; the flexible variety of content, assignments, learning tools and conditions.

Meanwhile, the students were also asked to mention any negative aspects of their learning experience. These are visualized in Fig. 2.

The students indicated the lack of live, face-to-face communication as a major drawback of distant language learning. Still, they

Fig. 1. Advantages of the flipped classroom model in distance learning from the students' perspective

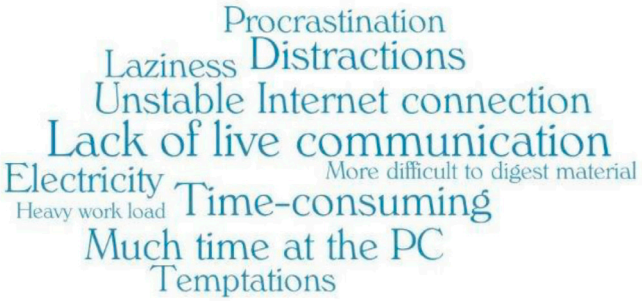

Fig. 2. Disadvantages of the flipped classroom model in distance learning from the students' perspective

also admitted that doing home assignments was equally as time-consuming as the flipped classroom model implies a heavy load of independent work before class. The students found it challenging as well in terms of self-organization due to numerous interruptions at home, which often led to distraction and procrastination. In addition, the students named some technical problems, such as an unstable Internet connection or sudden power outages. There were just a few students who said they didn't experience any difficulties at all.

As a part of the questionnaire the students were asked to mark the activities that they appreciated doing most of all in the flipped classroom model. Fig. 3 displays the participants' responses referring to pre-class activities.

Items (1) and (4) gained the highest percentage (71 % and 69 % respectively). According to the students, these activities were entertaining in nature and an effective means of receiving and remembering information. They fostered development of listening skills, encouraged the use of authentic speech, enlarged the students' worldview and saved time for classroom discussions. Item (2) was chosen by 36 % of the respondents as the students liked receiving their test results immediately. Item (3) was marked by 14 % of the participants as convenient in terms of the pace of time that the students could choose to study material.

Figure 4 details the students' responses to the items referring to in-class activities.

As the results presented in Fig. 4 demonstrate, the study subjects were the most preferable to discussions in pairs and small groups (82 %). The respondents believe that this activity contributed greatly to the development of their communicative skills as they constantly had to change partners, practicing questions and answering them spontaneously. Of course, these types of activities are exactly what we strive for in communicative learning, so this is considered to be a positive outcome. In ad-

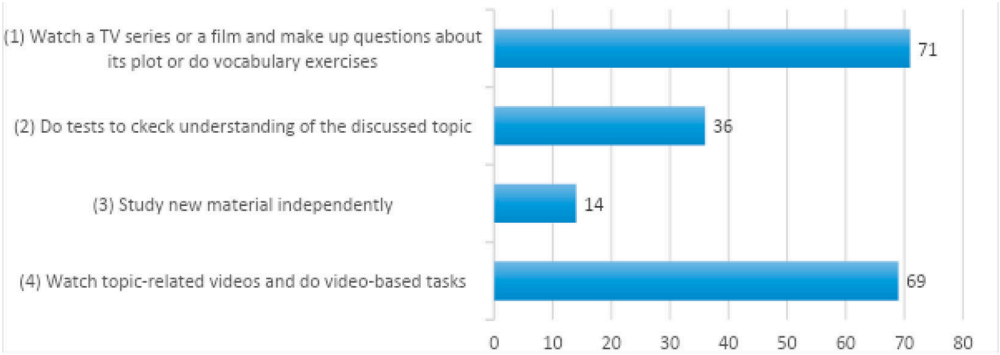

Fig. 3. Students' preferences for pre-class activities, %

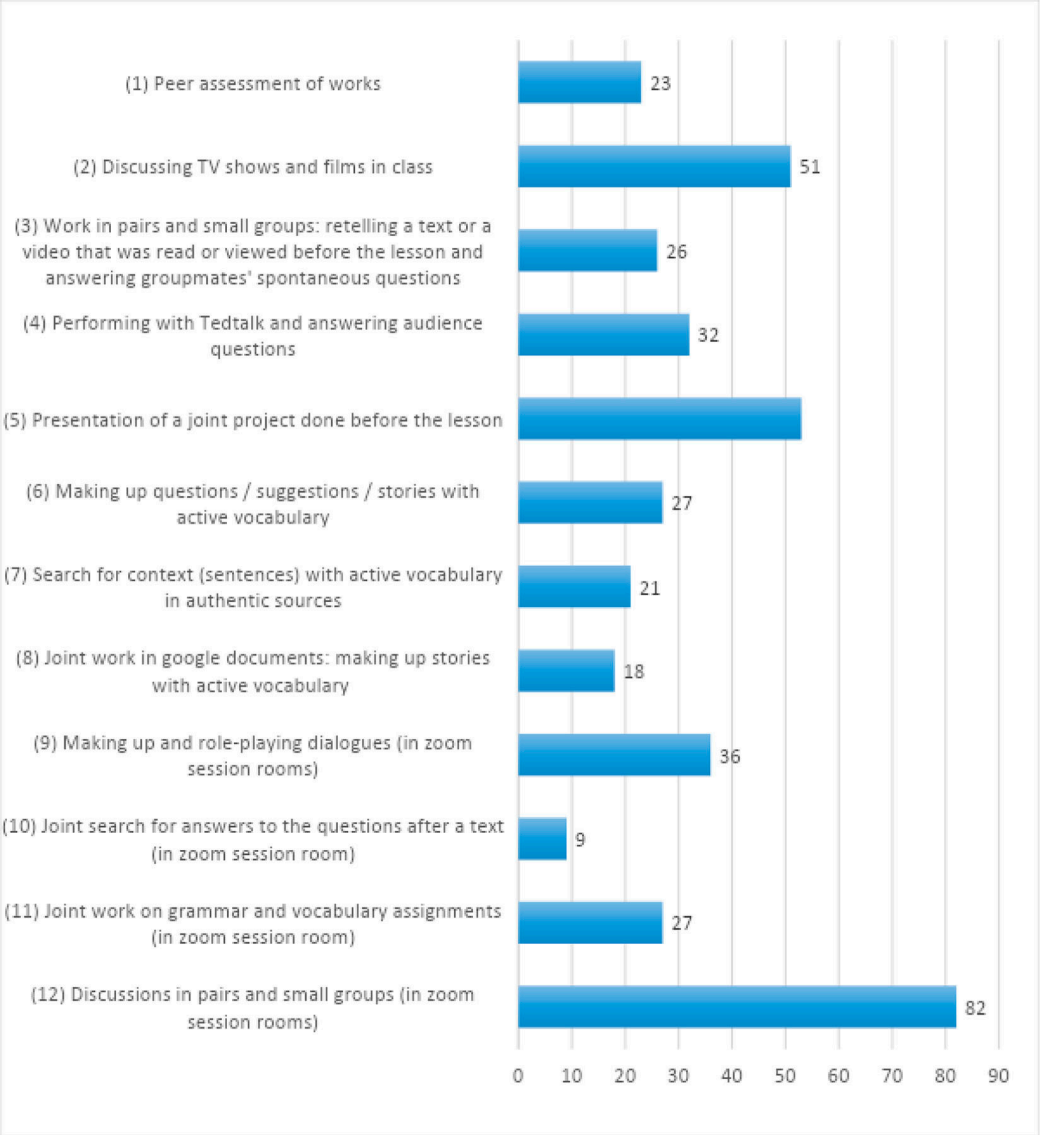

Fig. 4. Students' preferences for in-class activities, %

dition, the students feel it provided them with the opportunity to share their ideas on the topic and learn their group mates' views on the issue at hand. Interestingly, item (9) referring to role-plays was chosen for the same reasons, but gained less popularity (36 %).

The other two activities that were enjoyed by the majority of the students were item (5) and item (2), at 53 % and 51 %, respectively. The respondents perceived these activities as effective for development of their communicative skills and teamwork. Moreover, the participants viewed it as a good way to widen their vocabulary.

Vocabulary-aimed activities, items (3), (4), (6), (7), (8), and (11), were marked by 18–27 % of the participants. According to the students' feedback, these activities made the process of remembering new vocabulary easier.

Item (4) was mentioned by 32 % of the students due to its potential to improve speaking skills, particularly intonation. Additionally,

performing a TedTalk and answering audience questions seemed challenging to the participants in terms of summarizing information and coming up with answers to the questions after the talk.

23 % of the respondents pointed to item (1) as an effective way to receive feedback from fellow students and learn their views on the discussed topic.

Interestingly, item (10) was preferred by a few participants (9 %), although the other items referring to joint work were appreciated more.

The percentage of responses in favor of particular after-class activities is demonstrated in Fig. 5.

A relatively high preference for item (5) (41 %) is explained by the students' aptitude for writing and expressing their thoughts on the issues during discussion. Item (3) was marked by 23 % of the respondents for the opportunity to solidify language and content of the topic. 18 % of the students pointed to item (1) saying that Kahoots was a convenient platform for the final test as they could immediately see their detailed results and, in particular, knowledge gaps that needed restudying. Item (7) was popular with 14 % of the respondents as this activity provided them with the opportunity to get creative and develop their presentation skills. Interestingly, items (4) and (6) did not receive a single response.

(b) The use of digital tools as a medium for learning

The conducted survey revealed that when it comes to distance language learning, 55 % of responding students enjoyed using the following instruments most of all: *Zoom* (both synchronous sessions and breakout rooms) and *Kahoot*. Among the benefits that Zoom provides, students mention the opportunity for collaboration and teamwork, the opportu-

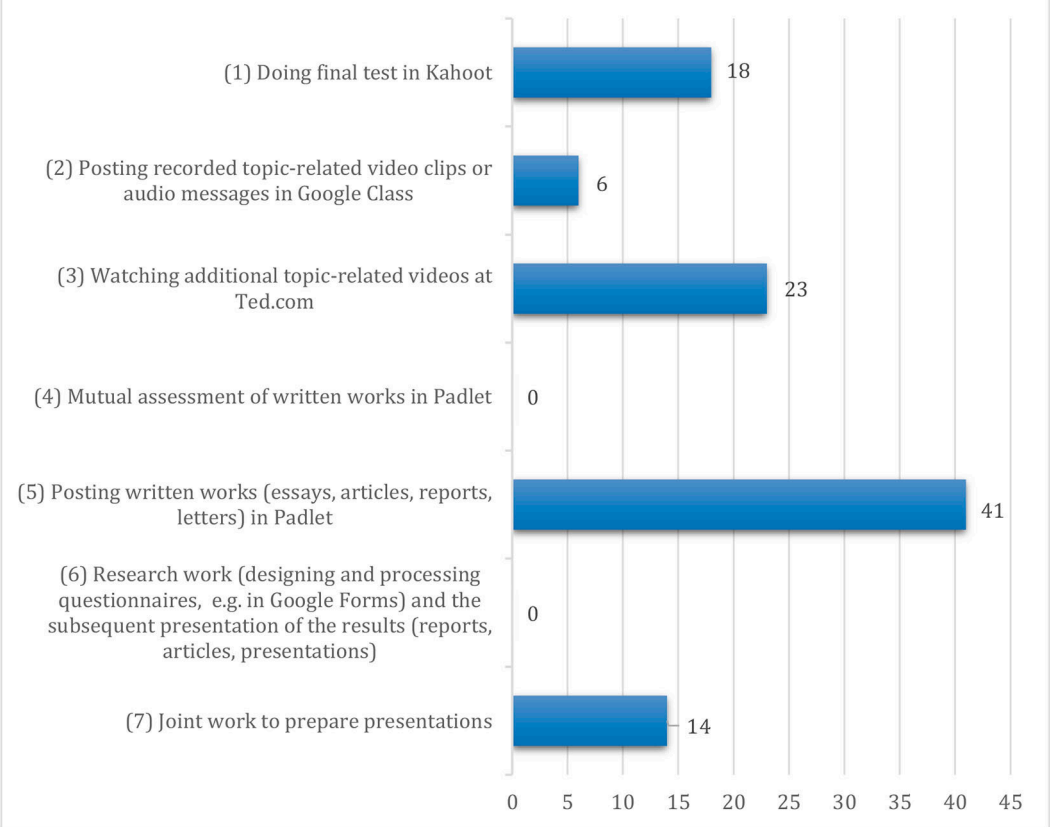

Fig. 5. Students' preferences for after-class activities, %

nity to keep communication with group mates and the teacher as well as the opportunity to work face-to-face in breakout rooms without being disturbed by other students. The respondents highlight the convenience of using such a platform as it allows users to get in and out easily and saves time for commuting. All in all, students find the Zoom experience close to in-person communication and collaboration. Another popular tool, Kahoot, was described as entertaining, offering a variety of tasks, appealing in terms of the testing format, providing fast results, convenient for further mistakes analysis and fun for competing with group mates.

Class management software, websites and communication tools gained the following percentages of preference: G*oogle Classroom* – 41 % (due to its convenient interface and the opportunity to create tasks and deadlines), *Vkontakte* – 36 % (due to the ability to exchange information and communicate with group mates and the teacher in real time), *Padlet* – 36 % (due to the convenient placement of essays and the possibility to look through and comment on other students' work, and the opportunity to be creative), and *Google Documents* – 26 % (due to the opportunity for open collaboration by more than one user).

Presentation aids such as *Canva* and *Google Presentations* were positively evaluated by 50 % and 23 % of the students, respectively, for being helpful when making presentations.

The survey showed students' preference for using sites with authentic video for educational purposes: *TEDTalks* appealed to 46 % of the respondents, *Learning English (BBC)* – to 14 %, *iSLcollective* – to 14 % and *Tube Quizard* – to 5 %. Students believe that these tools not only provide interesting, life-relevant information but are also useful for developing listening skills and vocabulary.

Another set of online resources that students had experience with concerns foreign language vocabulary. According to the respondents, they mostly enjoyed using online English dictionaries (36 %), SKELL (Sketch Engine for Language Learning) (32 %) and YouGlish (17 %) to improve vocabulary scale by observing words and phrases in context.

(c) Developing the 4C skills through the flipped classroom

To address this research question, a statistical comparison was drawn between the students' evaluation scores of their 4C skills before the experiment in March 2020 and after the experiment in May 2021. Table 1 shows the statistics of the students' self-evaluation scores in terms of their 4C skills.

According to the results in Table 1, the overall tendency is that all 4C skills – communication, collaboration, creativity and critical thinking, were given higher scores at the end of the experiment. The highest mean increase is observed for communication skills (in average by 1.5 points), item (4) being the leader of the tendency.

Conclusions and recommendations

Digitization of educational space in universities provides huge potential for both new ways of language teaching and answers to the challenges that academic staff have to respond to. The effects of the COVID-19 pandemic have been far-reaching and the field of education has been no different. It has caused a global re-orientation towards online communication resulting in even faster digitalization of education and the pursuit of alternative methodologies. As can be seen from the exciting results of our survey, the flipped classroom has a lot to offer language students and teachers looking for such an effective online methodology.

The idea of the flipped classroom in this study was to move from a passive, teacher-centered learning environment to an active, student-centered learning environment. Our survey showed that 94 % of young people enjoyed the flipped classroom model in distance learning because they could improve their self-study skills, communication skills, collaboration skills, critical thinking skills, and creativity.

More specifically, the students expressed higher levels of satisfaction with pre-class topic-related videos (including TV series, films, etc.) and completing video-based tasks because these activities are a more effective means of receiving and remembering infor-

Table 1. Students' evaluation of their 4C skills

4C skills	March 2020		May 2021	
Communication	M	SD	M	SD
(1) I can use proper strategies and expressions for starting and ending a conversation, asking questions and responding to them	2.318	1.327	3.727	1.008
(2) I can paraphrase and summarize different ideas and express my opinion towards others' points of view	2.409	1.230	3.727	0.862
(3) I can deal with written communication effectively	2.500	1.157	3.636	0.881
(4) I can share my ideas during in-class and online sessions with others	2.272	1.249	3.818	0.886
Collaboration				
(5) I can do collaborative tasks in groups (e.g., matching, ranking, seeking for information and filling-the-gaps activities, etc.)	2.545	1.117	3.590	0.984
(6) I can successfully do project work with others	3.136	1.358	4.090	0.949
(7) I can reach a common consensus during debates with others	2.363	1.523	3.409	1.154
(8) I can do peer review of written and speaking tasks of others, give and receive feedback	2.409	1.336	3.409	0.937
Creativity				
(9) I can generate different ideas	2.500	1.305	3.681	1.182
(10) I can construct a diagram, sketch, etc. to make a model that represents my idea	2.636	1.109	3.590	1.072
(11) I can apply my individual talents, ideas and thoughts when communicating with others and completing different tasks	2.545	1.304	3.818	0.886
(12) I can use different tools and resources to complete project work, storytelling tasks, etc.	2.681	1.292	3.954	0.975
Critical thinking				
(13) I can gather relevant information for my projects	3.045	1.186	3.954	0.928
(14) I can ask and answer thought-provoking questions	2.318	1.182	3.454	1.075
(15) I can discover the author's point of view in the context and make conclusions	3.000	0.953	3.727	1.008
(16) I can find solution for a problem when studying and I am active as a learner	2.590	1.072	3.681	1.103

mation, developing listening skills, enlarging their worldview and saving time for classroom discussions. They enjoyed discussing different topics, TV shows and films in pairs and small groups during classes. The respondents considered it an advantage of the new methodology that they could develop communication and teamwork skills, widen their vocabulary and share their ideas on the topic. As for after-class activities, the students had a better outlook on writing essays, articles, reports and letters.

It should be mentioned here that some students were unable, or unwilling, to complete the class assignments because of its time-consuming nature, lack of confidence and difficulties with self-organization. Some students didn't like to study new material independently, assess mutually written works or do research work. In addition, they named technical problems and the lack of live face-to-face communication as major drawbacks of the online flipped classroom. Nevertheless, all students were actively involved in the learning process and most of them performed well in spite of all these challenges.

Having studied our students' experiences of the flipped classroom, we developed the recommendations for language teachers as the result of the findings of this research. Thus, to

apply and adopt the flipped classroom model in the context of digitalization of educational space more successfully, teachers are recommended to:

- take into consideration students' individual expectations and needs when constructing the online foreign language flipped classroom;
- explain to students how to study independently and use digital tools and resources to their advantage before implementing the flipped classroom model;
- make assignments for before and after class independent work concise, simple and not too time-consuming;
- include watching short video materials as a pre-class activity (e.g., TedTalks);
- provide a variety of in-class activities aimed at developing communication and collaboration skills using digital communication platforms and videoconferencing applications (e.g., general Zoom sessions and breakout rooms) and learning management systems for students' joint projects and peer assessment (e.g., Google Classroom and Padlet);
- assign after-class activities as a follow-up to the discussed issues during the class using social media, online educational resources and various e-assessment tools (e.g., Kahoot);
- use the online flipped classroom as a means to develop students' 4C skills of the 21st century (communication, collaboration, critical thinking and creativity).

In conclusion, the current flipped classroom model as an innovative educational technology has shown that the students' perceptions of the flipped classroom were positive and they suited the demands of students at the university level. The flipped classroom implemented in this study is just one example of how language teachers can change their own teaching practices. The results indicate that the flipped classroom model offers promising ways to engage students in more motivating and effective active learning. This technology has proven its effectiveness and should be introduced into higher education on a large scale. Further research is required to investigate the applicability of the flipped learning continuum in a range of learning contexts.

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Comprehensive Analysis of the Class Teachers' Survey about Educational Work

Aleksandr S. Losev*[a] and Ivan N. Shablya[b]
[a]*Institute for Applied Mathematics*
Far-Eastern Branch of Russian Academy of Sciences
Vladivostok, Russian Federation
[b]*Secondary school No. 14*
Ussuriysk, Russian Federation

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Abstract. Educational work is an integral part of the educational process, and requires a unified and systematic approach to its implementation, similar to the learning process. To date, it is quite obvious that all the educational functions assigned to the school and the class teacher are professionally performed only by the latter. The study is devoted to a comprehensive analysis of the main difficulties faced by the class teacher in the course of the implementation of educational functions. A historical analogy is drawn, reflecting the change of the main organizer of the educational process, depending on the educational functions assigned to him. The formulation of the main question of the study of who is obliged to carry out class leadership at school today is substantiated from the standpoint of educational functions being implemented. The empirical basis of the study is the survey data for the 2011–2012 and 2019–2020 academic years, teachers who perform the duties of class leadership in urban and rural schools in Primorsky Krai. A comprehensive analysis and processing of the obtained data was carried out using the methods of mathematical statistics with an appropriate level of significance, confirming the statistical validity of the result. As a result, a clear dynamic has been established, reflecting changes in the main direction of educational work from the student to the parent, and the increasing role of the latter in the educational process as a whole. A reasonable decision was made that the main implementer of educational work should be a released class teacher, whose main, and not an accompanying, function is the professional implementation of the state's educational policy in education.

Keywords: education, school, upbringing, questioning, comprehensive statistical analysis, uneven distribution.

Research area: pedagogy.

* Corresponding author E-mail address: A.S.Losev@yandex.ru

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Комплексный анализ опроса классных руководителей о воспитательной работе

А.С. Лосев[а], И.Н. Шабля[б]
[а]Институт прикладной математики
Дальневосточного отделения Российской академии наук
Российская Федерация, Владивосток
[б]Средняя общеобразовательная школа № 14
Российская Федерация, Уссурийск

Аннотация. Воспитательная работа как неотъемлемая часть образовательного процесса требует единого и системного подхода к её выполнению аналогично процессу обучения. Сегодня уже очевидно, что все воспитательные функции, возложенные на школу и классного руководителя, профессионально выполняются только последним. Исследование посвящено комплексному анализу основных трудностей, возникающих перед классным руководителем в ходе реализации воспитательных функций. Проведена историческая аналогия, отражающая смену главного организатора воспитательного процесса в зависимости от возлагаемых на него функций. Обоснована постановка ключевого вопроса исследования о том, кто обязан в школе осуществлять классное руководство с позиции реализуемых воспитательных задач. Эмпирической основой исследования послужили итоги анкетирования за 2011–2012 и 2019–2020 учебные годы учителей, выполняющих обязанности классного руководства в городских и сельских школах Приморского края. Проведены комплексный анализ и обработка полученных данных с помощью методов математической статистики с соответствующим уровнем значимости, подтверждающим статистическую обоснованность результата. Установлена явная динамика, отражающая перенаправление вектора воспитательной работы с обучающегося на родителя и возрастание роли последнего в образовательном процессе в целом. Сделан однозначный вывод, что основным реализатором воспитательной работы должен быть освобожденный классный руководитель, у которого базовой, а не сопутствующей функцией станет профессиональная реализация воспитательной политики государства в образовании.

Ключевые слова: образование, школа, воспитание, анкетирование, комплексный статистический анализ, неравномерное распределение.

Научная специальность: 13.00.08 – педагогические науки.

Введение

В середине XIX века выдающийся отечественный педагог К. Д. Ушинский, размышляя о соотношении трех важнейших компонентов любой образовательной системы, таких как «обучение», «воспитание», «развитие», пришел к выводу о том, что «в преподавателе учебного заведения знание

предмета далеко не составляет главного достоинства. Главное достоинство преподавателя состоит в том, чтобы он умел воспитывать учеников» (Ushinskii, 2005). И с этим нельзя не согласиться, ведь от качества воспитательной работы учителя зависит уровень воспитанности общества в целом. По этой причине вопросам организации и осуществления воспитательной работы должно уделяться пристальное внимание.

Сегодня в условиях перехода на обновленные образовательные стандарты общество переживает очередной всплеск интереса к воспитательной деятельности, к изучению вопросов о включении учащихся в разнообразные виды внеурочной деятельности. Необходимо отметить, что подобный интерес проявлен со стороны как государства, так и научно-педагогического сообщества начиная с середины первого десятилетия XXI века. Примером этому могут служить следующие факты.

Во-первых, опубликованы материалы, отражающие новые теоретические подходы к воспитанию (Golovneva, 2007; Malenkova, 2004). Во-вторых, появились теоретические работы по изучению исторических и сравнительно-исторических аспектов организации воспитательной работы (Vulfson, 2008; Kaganovich, 2008). В-третьих, изданы учебники и учебные пособия для студентов – будущих педагогов, раскрывающие смысл и особенности организации современного воспитательного процесса (Malenkova, 2004; Slastenin, 2009). В-четвертых, в тематических методических журналах по организации воспитательной работы стали печатать статьи для классных руководителей, в которых рассматривались отдельные вопросы внеурочной деятельности со школьниками (Lizinskii, 2007; Stepanov, 2006; Stepanov, 2007). В-пятых, существуют публикации, в которых особое внимание обращено на такую важную составляющую деятельности любого классного руководителя, как работа с родителями (Krupina, 2001; Tiunnikov, 2003). И, наконец, произошло формирование этнопедагогики – отдельной отрасли педагогической науки, вбирающей в себя знания о специфике и особенностях организации обучения и воспитания различных народностей, проживающих в России (Dzhurinskii, 2007; 2010) и за рубежом (Cohen et al., 2009; Khoury-Kassabri et al., 2004). В периодике стали встречаться статьи теоретического характера (Nezdemkovskaia, 2009) и работы, отражающие результаты различных социологических исследований по отдельным аспектам поликультурного образования и этнопедагогики (Rozhkova, 2009; Baldry, 2003; Dorio et al., 2020; Mickelson, 2003).

Таким образом, на данный момент в педагогической литературе накоплено большое число материалов, посвященных как содержанию деятельности классного руководителя (Aleksandrova, 2007; Andronova, Shablya, 2012; Lizinskii, 2003), так и способам оценки качества его работы (Pyhtina, 2020). Кроме того, значимый результат, определяющий место и роль классного руководства в системе образования, получен в исследовании (Ichetovkina, 2020), где рассмотрен процесс трансформации классного наставника в классного руководителя в историческом контексте, дан сравнительный анализ, в результате которого выделены тенденции теории и практики воспитательной деятельности классного наставника и классного руководителя. Показана историческая смена одного на другого в зависимости от их функций, а также основных направлений, форм и результатов воспитательной деятельности.

Постановка проблемы

По исторической аналогии естественным образом возникает предположение, что в результате смены «систематического наблюдения за индивидуальным развитием школьника, создания оптимальных условий для формирования его личности в процессе взаимодействия с окружающим миром и с людьми» (Lizinskii, 2003) на «деятельность, направленную на развитие личности, создание условий для самоопределения и социализации обучающегося на основе социокультурных, духовно-нравственных ценностей и принятых в обществе правил и норм поведения в интересах человека, се-

мьи, общества и государства»[1] необходимо провести и смену главного организатора воспитательного процесса. Принятый закон ясно определил позицию государства в образовательной системе, которая заключается в общем руководстве и создании благоприятных условий по достижению поставленных целей. В результате вся воспитательная функция возложена на школу и классного руководителя, причем только последний выполняет их профессионально. Соответственно, логично предположить, что для эффективного выполнения обязанностей, число которых существенно выросло, классному руководителю нужно больше времени и возможностей.

В настоящей работе решается вопрос о том, кто обязан сегодня в школе осуществлять классное руководство: учитель-предметник или освобождённый классный руководитель. На основе анкетирования в образовательных учреждениях на территории Приморского каря рассмотрена динамика изменения занятости классного руководителя с 2011 по 2020 гг. Сравнительный анализ полученных итогов с использованием методов математической статистики доказал необходимость разделения воспитательной и образовательной функций между освобождённым классным руководителем и учителем-предметником.

Методология

Сбор первичных данных, необходимых для решения поставленной задачи, проходил в два этапа. Первый проведен в 2011–2012 учебном году, второй – в 2019–2020 учебном году. В каждом опросе приняли участие 70 учителей, выполняющих обязанности классного руководителя, из городских и сельских школ Приморского края. Необходимо отметить, что выборка респондентов проводилась таким образом, чтобы число представителей одного образовательного учреждения не превышало двух человек. Это позволило максимально расширить географию участников опроса и охватить самые отдаленные уголки Приморского края.

Предложенная анкета включала 11 вопросов разного характера и содержания. Полученные результаты представлены в табл. 1.

Обсуждение

Таким образом, можно утверждать, что нормативно-правовая база, регламентирующая функциональные обязанности классного руководителя в школе, принципиально не изменилась. Она отражена в должностных обязанностях, инструкции, положении о классном руководителе и других локальных актах (табл. 1, п. 2). Вместе с тем существенно вырос документооборот, что подтверждают 92 % респондентов (табл. 1, п. 7). Основной причиной послужило изменение внешних условий реализации классного руководства. За последние несколько лет существенно ужесточились требования к проведению различных внеклассных и внешкольных мероприятий. Повысились нормативы пожарной, антитеррористической и личной безопасности, выполнение и соблюдение которых требует огромной подготовительной работы, зачастую занимающей намного больше сил и времени, чем запланированное воспитательное мероприятие. Это составление и согласование различных инструктажей и разрешений, подтверждающих, что запланированное мероприятие пройдет с соблюдением всех правил и норм безопасности.

Наравне с этим остались без существенных изменений приоритетные направления воспитательной работы (табл. 1, п. 9), которые регламентированы Законом об образовании. Однако распределение усилий и внимания по данным направлениям, несмотря на незначительную разницу в результатах опроса, неравномерно, что подтверждается статистической оценкой, полученной после применения критерия Пирсона при 5 %-м уровне значимости (Nosko, 2011). Последнее связно с тем, что главным заказчиком образования остается государство и естественным образом про-

[1] Федеральный закон от 29 декабря 2012 г. № 273-ФЗ «Об образовании в Российской Федерации» (с изменениями и дополнениями). Доступ из СПС «Гарант». URL: https://base.garant.ru/77687593

Таблица 1. Сравнительный анализ результатов опроса
Table 1. Comparative analysis of the survey results

№	Вопрос и варианты ответов	2012 (%)	2020 (%)
1	2	3	4
1.	Кто, на Ваш взгляд, должен осуществлять классное руководство в школе?		
	Освобожденный классный руководитель	52	82
	Учитель-предметник	48	18
2.	Есть ли в Вашей школе документы, определяющие обязанности классного руководителя?		
	Должностные обязанности классного руководителя	20	27
	Инструкция классного руководителя	24	17
	Положение о классном руководителе	17	20
	Прочие документы	39	36
3.	Какие профессиональные затруднения Вы испытываете в работе классного руководителя?		
	Затруднения в работе с трудными учащимися	40	22
	Трудности при работе с родителями	23	43
	Изучение и диагностика личности учащихся	21	19
	Освоение новых педагогических технологий	16	16
4.	Если у Вас возникают затруднения, к кому (чему) Вы обращаетесь за помощью, поддержкой?		
	К другим учителям	24	22
	К методической литературе	25	19
	К администрации школы	19	20
	К ресурсам сети Интернет	17	31
	К руководителю МО классных руководителей	15	8
5.	Помощь каких специалистов Вам будет полезна для ведения профессиональной деятельности?		
	Школьного психолога	56	52
	Социального педагога	44	48
6.	Насколько Вы удовлетворены работой со своим классом?		
	Полностью удовлетворены	30	20
	Частично	60	57
	Не удовлетворены	10	23
7.	Произошло ли у Вас увеличение работы с документацией по классному руководству за последнее время?		
	Да	60	92
	Нет	40	8
8.	Какому виду деятельности Вы уделяете больше времени?		
	Непосредственному общению с учениками	44	34
	Работе с родителями	15	29
	Работе с документами	21	29
	Организаторской работе	19	8
9.	Какие направления воспитательной работы Вы считаете наиболее значимыми в настоящее время?		
	Здоровьесбережение	27	27

Окончание табл. 1
Conclusion of Table 1

1	2	3	4
	Духовно-нравственное воспитание	24	22
	Патриотическое воспитание	20	28
	Формирование толерантности	16	10
	Эстетическое воспитание	13	12
10.	Необходимо ли методическое объединение классных руководителей школе?		
	Да	64	89
	Нет	36	11
11.	Какие качества способствуют взаимопониманию между Вами и воспитанниками в большей степени?		
	Профессионализм классного руководителя	21	21
	Требовательность, честность и доверительность	18	17
	Эрудиция учителя и последовательность в своих действиях	18	21
	Доброта	17	16
	Демократичность и самостоятельность суждений	14	14
	Хорошее чувство юмора	12	11

водимая им социальная политика относительно подрастающего поколения полностью отражается на воспитательной работе в образовательных организациях.

В 2011–2012 учебном году политика государства была направлена на здоровьесбережение молодого поколения, разрабатывались нормы ГТО[2], велась пропаганда здорового образа жизни. Как результат – соответствующее направление воспитательной работы выходит на первый план – 27 % (табл. 1, п. 9). В 2019–2020 учебном году приоритетом стало патриотическое воспитание[3], что также отразилось на воспитательной работе всех образовательных учреждений – 28 %. Несмотря на то что позиции по направлению здоровьесбережения остались неизменными, неравномерность распределения усилий существенно увеличилась за счет снижения работы по остальным направлениям, например, формированию толерантности и эстетического воспитания. Последнее подтверждается как данными опроса, так и сравнительным анализом расчетных величин критерия Пирсона по обеим выборкам при 5 %-м уровне значимости (Nosko, 2011).

Наблюдается также изменение приоритета в основном виде деятельности классного руководителя (табл. 1, п. 8). За сравнительно короткий срок приоритет внимания переместился с учеников (34 %, ранее 44 %), на их родителей (29 %, ранее 15 %). Опрос респондентов подтверждает, что основные трудности и профессиональные проблемы сегодняшний классный руководитель испытывает в работе с родителями ученика (табл. 1, п. 3).

Очевидно, что увеличение времени работы полностью коррелирует с проблемными направлениями, что явно отражено на рис. 1: многоугольник распределения профессиональных затруднений классного руководителя буквально повернут в сторону родителей (43 %), вследствие чего

[2] Указ Президента РФ от 24 марта 2014 г. № 172 «О Всероссийском физкультурно-спортивном комплексе «Готов к труду и обороне» (ГТО)». Доступ из СПС «Гарант». URL: https://base.garant.ru/70619520

[3] Указ Президента РФ от 20.10.2012 № 1416 (ред. от 25.07.2018) «О совершенствовании государственной политики в области патриотического воспитания». Доступ из СПС «КонсультантПлюс». URL: http://www.consultant.ru/document/cons_doc_LAW_136827

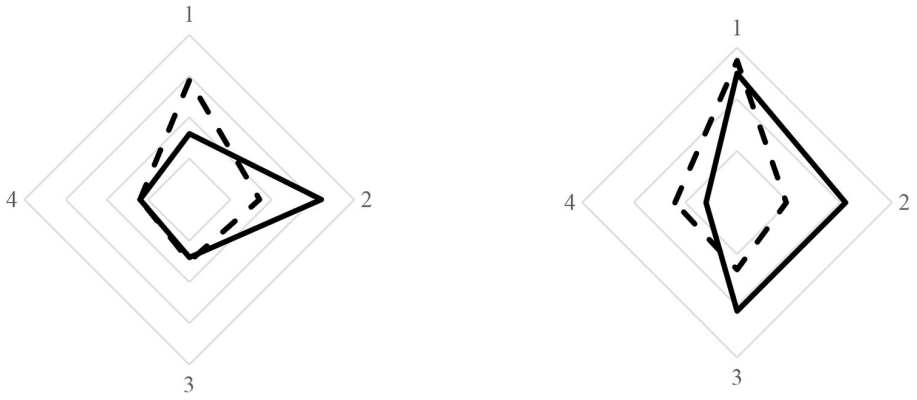

Рис. 1. Многоугольник распределения профессиональных затруднений классного руководителя (справа) и приоритета распределения времени между ними (слева): 2012–2013 гг. – пунктир; 2019–2020 гг. – сплошная

Fig. 1. The polygon of the distribution of the professional difficulties of the class teacher (on the right) and the priority of time between them (on the left): 2012–2013 – dotted line; 2019–2020 – solid

и многоугольник распределения времени классного руководителя принял соответствующий вид, характерный для сложившейся ситуации.

Одновременно уменьшается объем организаторской работы (8 %, ранее 19 %), на смену которой приходит индивидуальный подход и личное общение, но не с учеником, а с его родителями.

На фоне сложившейся ситуации очевидно, что потребность классного руководителя в методических объединениях существенно возросла – в целом на 25 % (табл. 1, п. 10), что подтверждают 89 % респондентов. А если учесть, что данное структурное подразделение зачастую выражено в единоличной координационной деятельности заместителя директора по воспитательной работе, которая носит планово-приказной характер, то источником помощи (табл. 1, п. 4) становятся старшие коллеги, методическая литература и интернет-ресурсы (рис. 2).

Сегодня приоритет отдается последнему (31 %), что естественно в условиях цифровизации образования, хотя и не всегда успешно. В большинстве случаев интернет-ресурсы содержат огромное количество информации, которая разрозненна, выборочна и недостоверна. Соответственно, ожидание помощи и поддержки от интернета в решении конкретной педагогической, методической или воспитательной задачи трансформируется в новую ещё более трудоемкую задачу по поиску нужного материала и знания, которого не хватает. Очевидно, что сформулировать запрос во всемирную сеть на поиск необходимого знания для решения конкретной педагогической задачи намного сложения, чем обсудить её с опытными коллегами или почерпнуть из профессиональной литературы.

В результате возникающие перед молодым и неопытным классным руководителем трудности и задачи остаются полностью нерешенными или решенными частично, а сама воспитательная работа уходит на второй план, уступая место обучению. В итоге работа классного руководства не удовлетворяет никого из участников образовательного процесса, в том числе и самого учителя (табл. 1, п. 6), что подтверждают 80 % респондентов. Ситуация усугубляется тем, что в данном положении оказываются именно молодые учителя, только начинающие свой профессиональный путь, что отражено в анкетных данных респондентов: средний стаж

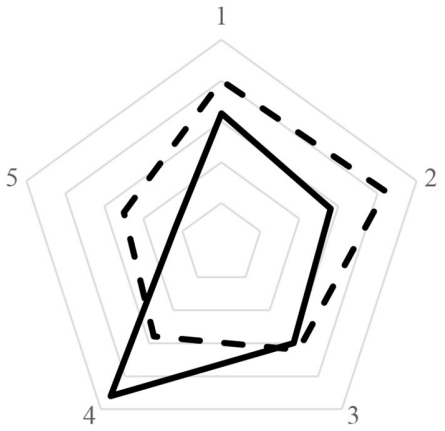

Рис. 2. Многоугольник распределения источников методической помощи классным руководителям: 2012–2013 гг. – пунктир; 2019–2020 гг. – сплошная

Fig. 2. The polygon of the distribution of sources of methodological assistance for classroom teachers: 2012–2013 – dotted line; 2019–2020 – solid

работы в должности классного руководителя участников второго опроса составил 14,5 лет, в то время как в первом опросе он был 18,5 лет.

В результате на смену уверенному в себе учителю, использующему в своей работе авторитарный стиль общения, подкреплённый профессионализмом и опытом (табл. 1, п. 11), приходит молодой и неопытный, требования к которому однако существенно выше со стороны как учеников, так и их родителей, администрации школы, общества и т.д. Спасением в данном случае становится умение наладить диалог со всеми участниками образовательного процесса, а также четкое понимание цели, выстроенная последовательность действий и эрудиция (табл. 1, п. 11). Конечно, нельзя оставить без внимания тот факт, что перемены в воспитательной работе заставили учителя расширить формы взаимодействия с учеником, что является положительным моментом. В частности, если провести сравнительный анализ расчетных величин критерия Пирсона по обеим выборкам опроса при 5 %-м уровне значимости по данному пункту анкеты, то разброс качеств, способствующих взаимопониманию между учителем и воспитанниками, стал более равномерным.

Заключение

На основании изложенного можно сделать вывод, что задача по воспитанию ученика, стоящая перед классным руководителем, очень сложна. В существующих условиях, характеризуемых повышенными требованиями, отсутствием помощи и четких «принятых в обществе правил, и норм поведения» (Iunusova, 2019), пристальным вниманием и нескончаемой отчетностью перед каждым участником не только образовательного процесса, но и стороннего наблюдателя, задача воспитания переходит в разряд невыполнимых. Поэтому главный вопрос: «Кто должен осуществлять классное руководство в школе?» – имеет достаточно очевидный ответ, что ясно понимают действующие учителя. Конечно, это должен быть освобожденный классный руководитель. Полученное решение носит объективный характер и является логическим продолжением социальной политики государства, проводимой в сфере образования, а принятые за последние несколько лет законы и постановления в данной области подтверждают его заинтересованность и стремление к созданию единого образовательного пространства, выступающего необходимым условием выполнения тех задач и целей, которые стоят сегодня перед всеми участниками образовательного процесса.

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Kyrgystan School Teachers' Motivation and Well Being

Aelita Zholchieva[a] and Ainuru Zholchieva*[b]
[a]*American University in Central Asia*
Bishkek, Kyrgyzstan
[b]*International Ala-Too University*
Bishkek, Kyrgyzstan

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Abstract. Teachers' motivation and encouragement is considered as one of the priority areas in the Education Development Strategy of the Ministry of Education and the Science of the Kyrgyz Republic. At the same time, teachers claim that the specified salary structure, benefits, and working conditions do not meet their basic needs. In this study we`ve tried to determine the extent to which teachers' expectations and needs correspond to their constructive, organizational, and communicative components of professional activity and their implementation.
The results of the study revealed that the teachers in schools are not happy with the distribution of responsibilities among them. Apart from these facts the teachers express overall satisfaction with their work. For instance, they are satisfied with the working conditions, teaching load, and the professional development opportunities proposed by the administration. Moreover, many teachers expressed their respect for the profession itself. The insights of the study can be further researched in details.

Keywords: teacher well-being, teacher job satisfaction, school teachers, scheduling program.

Research area: pedagogy.

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* Corresponding author E-mail address: info.alatoo@edu.kg
ORCID: 0000-0001-9928-7280

Мотивация и поощрение школьных учителей Кыргызстана

А. Жолчиева[а], А. Жолчиева[б]
[а]Американский университет в Центральной Азии
Кыргызстан, Бишкек
[б]Международный Университет Ала-Тоо
Кыргызстан, Бишкек

Аннотация. Мотивация и поощрение учителей рассматривается как одно из приоритетных направлений в Стратегии развития образования Министерства образования и науки Кыргызской Республики. В то же время учителя утверждают, что указанная структура заработной платы, льготы и условия труда не соответствуют их базовым потребностям. В данном исследовании мы попытались определить, насколько ожидания и потребности педагогов соответствуют конструктивным, организационным и коммуникативным компонентам профессиональной деятельности и их реализации.

Результаты исследования выявили, что учителя в школах недовольны распределением обязанностей между ними, хотя выражают общее удовлетворение своей работой. Например, их устраивают условия труда, преподавательская нагрузка, возможности профессионального развития, предлагаемые администрацией. Более того, многие педагоги выразили уважение к самой профессии. Выводы исследования могут быть дополнительно исследованы в деталях.

Ключевые слова: самочувствие учителя, удовлетворенность учителя работой, школьные учителя, программа планирования.

Научная специальность: 5.8.1 – общая педагогика, история педагогики и образования.

Introduction

Each part of the educational system is greatly influenced by economic and social changes and has a direct impact on the overall trajectory of a country's socio-historical development (Akhtara S. N et all, 2010). The quality of school teachers' work results is in well-educated graduates, contributing to the development of the country and plays an important role in ensuring a high level of education in the country. Many researchers note that one of the factors influencing the professional performance of teachers is their professional well – being and job satisfaction.

The Education Development Strategy of Kyrgyzstan for 2012–2020 of the Ministry of Education and Science of the Kyrgyz Republic demonstrated that teachers have increasingly become objects of managerial approaches brought by international donors. The language "what must be done with and for teachers" is used rather than "what teachers can do for education reform based on their practical experience" (The Education Strategy of KR, 2012).

However, it is the fact that there are very few articles by Kyrgyz researchers identifying factors affecting the motivation, encouragement and well-being of school teachers. There is an urgent need for research in this area of education in Kyrgyzstan. The work is to be conducted directly with school teachers to find out their emotional state, well-being, and how satisfied they are with their work. And this would help us reveal how effectively the state-created working conditions contribute to their work.

A variety of factors can influence teachers' well – being and job satisfaction: the quali-

ty of the relationship with their supervisors, the quality of the physical environment in which they work, and the degree of fulfillment in their work (Akhtara S. N et all, 2010).

Theoretical Framework

Teacher`s job satisfaction is a very important issue as it greatly affects a number of important workplace behaviors such as productivity and efficiency, systematic absenteeism, long-term mobility, and job rotation (Tsivgiouras S., Belias D., Efstathios V., Chris M. 2019)

Job rotation is the administrative control of employee engagement to minimize employee exposure to hazards (D. Baker, 2020), which can reduce feelings of inequality among employees (Konz, 2000).

Shefer (2019) considers the main factors of teachers' satisfaction with their activities are working conditions (wages, the nature of relationships with the administration and colleagues, the possibility of professional growth, the prestige of the profession, etc.), the content of work (the creative nature of work, interaction with all participants in the education process, etc.), work results (positive dynamics of the student, gaining of pedagogical experience, etc.). Russian professor Zinchenko (2016) substantiates the degree of teacher`s job satisfaction and their well – being as an important influencing factors on the educational process in general. It is also interesting that researchers (Davydova, Mitina, Danzanov) propose to consider well – being with professional performance as one of the significant criteria for the professional development of a teacher. For example, Danzanov (2010) notes that job satisfaction and well – being are the necessary factors in the effectiveness of a teacher's work and an important qualitative characteristic of the subject of his / her professional performance. According to the researcher, satisfaction with professional performance is one of the conditions for a teacher to fulfill his/her professional duties in educational institutions. A better performance from a teacher can only be expected if they are satisfied with their job (Ali, 2011). Along with other factors influencing teacher satisfaction, the researchers also consider administrative support, since administrative support plays an important role in the efficiency of any kind of organization with an administrative structure (Ali, 2011) be it the governmental or nongovernmental institution, or a commercial private sector organization. School leaders' support can motivate the teachers to work and make them feel that they are an important part of the educational institute. S. Anastasiou (2014) describes the role of teachers and school leaders as complex and multidimensional. The researcher states that the teachers` performance is influenced by several factors including the creation and maintenance of a healthy and creative work environment. Such an environment for the teachers should be the aim of educational managers all over the world.

It appears that school organizational climate may be one of the key factors in making the teachers feel satisfied and, accordingly, make their job performance more productive, functional, and desirable. Afshin (2019) suggests taking steps to assess the climate of schools and identify the dimensions which are critical for the health of schools, proving the findings of Zahoor (2011) where it was stated that in order to help teachers feel satisfied with their job it should be constructed in a favorable organizational climate at schools. Parlar et al. (2017) indicated in their research that professional cooperation, school administrator's support and the level of having a supportive working environment at schools and teacher leadership give positive and significant relationships. In addition to this, the results of the study show that professional cooperation and supportive working environments at schools are important variables explaining teacher professionalism.

A good level of life satisfaction could bring out good work performances. The teachers with a high level of life satisfaction could be better educational agents and their work could be more useful for child development.

Matyash and Pavlova (2015), conducting a survey among teachers, found that material security continues to be a serious problem, which was also revealed by Komarova (2001). These researchers stated that one of the most import-

ant factors in the unsatisfactory performance of teachers from a practical point of view is the low level of material remuneration. The findings of Marinette (2018) revealed that, low salary, poor working environment, lack of job satisfaction and bad principal leadership style contribute greatly to teacher attrition. Having studied the impact of working conditions on teachers` attrition in secondary schools in the South West Region of Cameroon the researcher found that teacher's attrition has an impact on the quality of the education. The researcher`s findings revealed that teacher's low salaries influence their attrition to a high degree. Ariffin (2013) also considers salary, professional development, administrative relationship, and rapport among the factors that influence job satisfaction.

Secondary school teachers are one of the occupational groups presenting the highest levels of sick leave due to stress in the workplace. This form of stress can cause burnout syndrome, which is characterized by emotional exhaustion, depersonalization, and low levels of personal accomplishment (Ignat A. A. & Clipa O, 2012). Work-related stress and emotional distress among schoolteachers are considered a serious concern in the educational context. According to Vincenza Capone`s research (2019) the planning development programs to reduce teachers' malaise and improve their evaluation methods involves taking into account the buffering effect of efficacy beliefs, school climate, and organizational justice against burnout and depression. Also, she points that the fairness in the distribution of incentives (material and moral) among colleagues also affects teacher job satisfaction. The next thing she points out as one of the main factors in a teacher's satisfaction is the status in the society the teacher, he/she has earned throughout his /her own career. Nyarko et al., (2014) found that when a teacher feels that he or she is earning a reasonable amount of money or he or she is making use of skills and abilities then that teacher will be satisfied. These researchers also consider that on the other hand, when a teacher feels that he/she is not earning enough or is not making use of abilities, then that teacher will not be satisfied. They came to the conclusion that the provision of the internal and external needs of employees serves as a catalyst that triggers their satisfaction with their jobs. Khora (2008) examined the role of social support in teachers' career, and it was found that motivated teachers differ from unmotivated teachers in two respects – their value orientation – educational beliefs or curricular ideologies that appear to influence programmatic decisions (Ennis, C. D., & Chen, A. 1995) and the social support they receive. Research by Bentea et.al. (2012) recommends that school leaders focus on the social environment of their organization and encourage teamwork and positive interpersonal relationships, explaining that a teaching degree should become a professional position that teachers in the education system can pursue as their teaching career progresses. Achieving this professional position means promoting, and recognizing their teaching ability, as well as raising salaries after promotion. Most of the conducted research found the salary and good relationship between the employees as one of the most important factors influencing satisfaction and well – being of a person.

Statement of the problem

The Law "On the Status of Teachers" was adopted in 2001, 10 years after the country received independence status. The Law provides a legal basis in the regulation of relations to the labour activity and social status of teachers, as well as their social status. Else, this law provides guarantees for the allocation of land to teachers without housing, an annual free medical examination of each teacher, the issuance of an interest-free loan for housing construction, and an additional payment from the local budget. But in reality, teachers do not have such social benefits (Bulan inst. Report, 2018).

On June 22, 2019, at an international conference in Bishkek, the Ministry of Education and Science announced that Kyrgyzstan had achieved the result which shows 73 % of graduates from pedagogical institutes go to school to work, although earlier only about 40–50 % of them worked in schools (www.akipress.org. 2019). But a UNESCO study in 2012 "General Basic Secondary Education by 2015" showed

that only 14 % of graduates from pedagogy faculties go to work in schools. In their study, the authors noted a serious shortage of teachers, and that many teachers should leave for retirement and be replaced by young teachers. Also, they noted that in addition to low salaries, there are other factors that lead to a shortage of teaching staff – these are meagre social packages, poor conditions, and low prestige of the teaching profession (kg.akipress.org. 2012). According to the statistical data by UNESCO "Education Sector Analysis 2007–2017" the overall unemployment rate in Kyrgyzstan was 7.6 % in 2015. The low level of teacher salaries, which remain below the national average, remains a serious disincentive for recruiting high quality candidates into the profession. In recent years, teacher salaries have increased but they are still low and many teachers have to take additional hours to earn more money [4]. This discrepancy in numbers is a very interesting fact for research. It is also interesting what the success of teachers in schools is if they go to work in the hope of being realized as a professional because the decline in the quality of education since the independence of the country is a widely debated topic in civil society and government. Out-dated curricula, lack of linkages between the labour market and the education system, low teacher salaries and high levels of plagiarism are cited as the causes of this phenomenon (Mambetaliev A. A, 2015).

The Education Development Strategy of the Ministry of Education and Science of the Kyrgyz Republic consider the motivation and encouragement of teachers who systematically improve students` achievement as one of the priority areas. At the same time, the teacher community in Kyrgyzstan sees a problem in the government's position regarding the effectiveness of teachers' work; they accuse teachers of the low quality of education, even if they do not claim, then by their attitude, they show their position which almost says that the level of efficiency and effectiveness of teachers does not require a constant request for higher wages, encouragement and improvement of working conditions. For their part, teachers argue (unofficially) that the specified wage structure, benefits, and working conditions do not satisfy their basic needs, since in other sectors of the economy the wage structure is higher, motivation and working conditions are higher. It is most likely that public school teachers cannot provide quality education when there is a gap between the Government and teachers. Having studied all sorts of factors that affect the attitude of teachers to their work and how satisfied they are with this or the services provided by the state, it will be possible to draw conclusions.

This study aimed to examine various factors that affect teachers ' self-esteem in secondary schools in Kyrgyzstan. It includes the identification of factors that affect the self-esteem of teachers with more than 5 years of experience and the teachers with less than 5 years of experience and their attitude to their professional activities. This will probably help us to determine the extent to which teachers' expectations and needs do not correspond to their constructive, organizational, and communicative components of professional activity and their implementation.

Methodology of Research

This is a descriptive survey-based study. A mixed research approach was used to obtain quantitative and qualitative information and the 5-point Likert – type – scale was used to analyze data using descriptive and logical statistics. Descriptive statistics were used to describe the overall results on the responses. The purpose of using the mixed method was mainly to get more detailed information from respondents. A simple random sample was used to select the respondents.

According to the results on the Fig. 1 which is with the responses on working conditions the statement "I would like to see clearer rules and procedures for all activities at our school' (Q3) gets 68 % of agreement. This result means that the rules and procedures for organized activities at schools are not clear for many teachers. We also see that the majority of teachers agree with the statement about a convenient workload (Q1), once again it asserts that the teaching load in schools is distributed correctly. The overall picture for statements about working conditions shows more positive

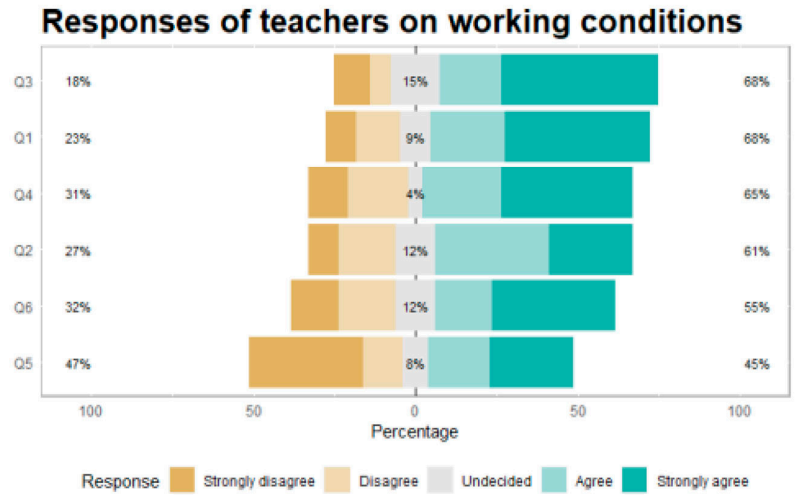

Fig. 1. Overall Job satisfaction of the teachers
https://www.kaggle.com/iliassuvanov/aelita-zholchieva

responses. 12 % of teachers were undecided with the statements but more "*Strongly agree*" answers were given than "*Strongly disagree*" scales to the statement "The work of a teacher consists of routine activities (Q2). This result proves the statements by Budi Utomo and Zinchenko (2016) who discussed much about the factors influencing teacher's motivation and personal expectations, and proved that teachers may lose their motivation to work because of the monotony of work. The hesitation to the statement "The large number of students in the classroom has a negative impact on my methodology" (Q6) may be caused by the fact that the teachers do not (or are not able to) monitor the overall level of their students` achievements and the results of their own teaching methods.

Discussion

This part includes items on teachers' attitude towards the teaching profession itself (Fig. 2): "Teaching encourages me to be creative; "Teaching turned out to be more interesting than I expected' and all these items are given in positive form. As we see the most of the responses are positive; the statement 'I am pleased with the opportunities for professional development offered by my work' (Q7) gets 74 % of "*Agree*" and in comparison, with other statements this is the least percentage. This result shows that the professional development policy at schools needs some improvement. Teachers show their positive attitude towards their profession giving mostly positive answers to the statements "Teaching encourages me to be creative' and "Teaching allows me to develop and distribute new methods to colleagues" (80 %), and 11 % of teachers were undecided with the statement "Teaching allows me to use different skills" (Q8) and we can suppose that some teachers do not use different methods in teaching and they need to improve their teaching skills. 19 % of respondents disagreed with the statement of career prospects (Q9), they do not agree that they have good opportunities to grow professionally.

Looking at the ratio of the responses to the statement on teacher remuneration (Fig. 3) we see that the most "*Strongly disagree"* answers (49 %) get the statement "The teacher's income is sufficient for ordinary expenses" (Q19). 19 % of the respondents were undecided with this statement and 32 % (which is the least percentage) of them agreed with the statement. 64 % of the respondents pointed out that they need to constantly take out a loan due to lack of salary, 11 % of them were undecided with the statement though we can assume that they would agree with it too, just hesitated to say *"yes"*. 59 percentage of

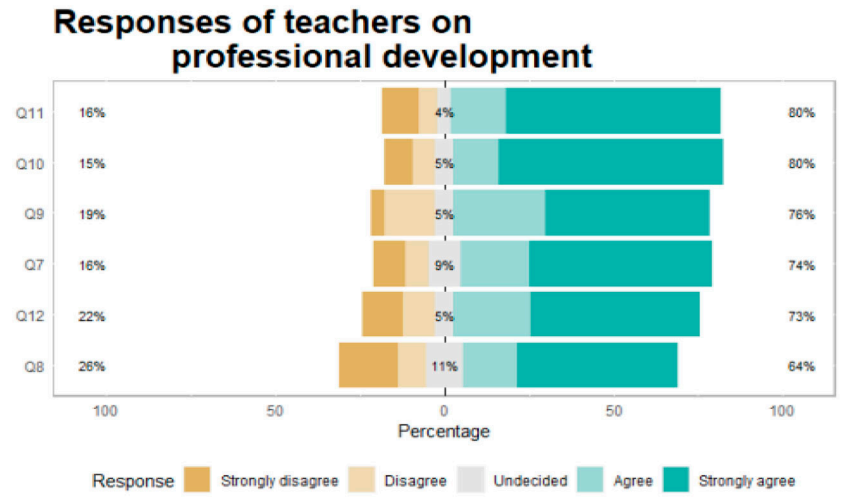

Fig. 2. https://www.kaggle.com/iliassuvanov/aelita-zholchieva

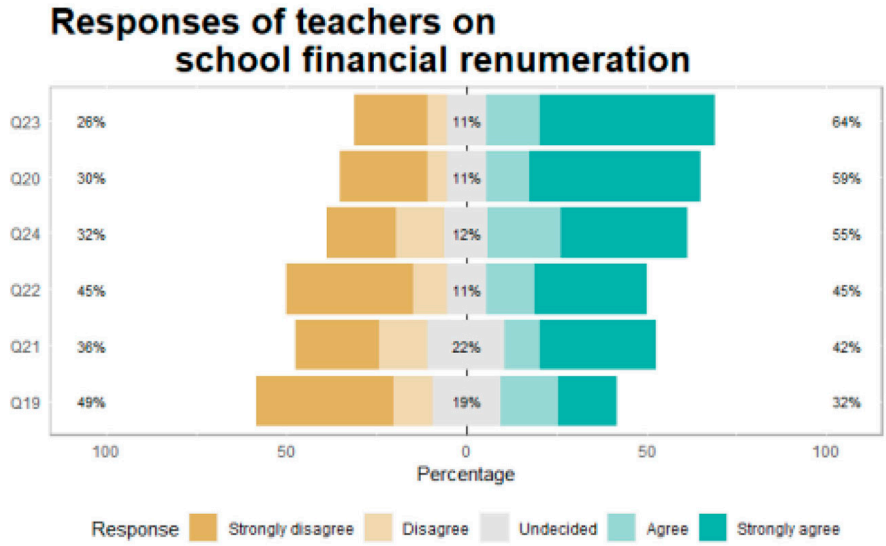

Fig. 3. https://www.kaggle.com/iliassuvanov/aelita-zholchieva

the respondents do not strongly agree with the statement (Q20) that they are well paid in proportion to their efforts, 30 % of them think that their effort is appreciated appropriately. 45 % of the respondents do not know what the calculation of their salary is (Q22- I understand what the calculation of my salary consists of) so, we find that not all teachers are informed about the calculation of their salary. Thus, there is a need to inform teachers about their salary calculation so that they would be able to stick up for their own rights. An interesting fact that 22 % of the respondents were undecided with the statement "Insufficient income prevents me from living the way I want" (Q 21), and 36 % of the respondents disagreed with the statement. Thus, we can assume that the teachers' life is not as bad as it is discussed by society (unofficial) and they do not consider their income level preventing things from living the way they want. At worst they might not imagine the way of better living or they get

used to their current way of living and don't want to change it. We also see that 55 % of the respondents need to work part-time elsewhere to cover all their expenses (Q24). Taking into the consideration this fact, we can assume that teachers work hard trying to earn more to provide themselves with a comfortable life. Overall results on remuneration statements show that the public-school teachers of Bishkek city are not satisfied with their income, and they need more information about the calculation of their salary.

Conclusion

The teaching profession is one of the most important professions in society. A teacher is the only person who, most of his or her time, is professionally engaged in the upbringing and education of children. We see and understand that teachers, as well as representatives of other professions, adapt to the conditions created for them.

Most of the respondents have shown positive attitudes towards their work. They are satisfied with the conditions created for work, teaching load, and the proposed by the administration the professional development opportunities (to a certain degree). Also, many teachers expressed their respect for the profession itself. They reacted positively to the statement that teaching children turned out more interesting than they expected. They believe that they have a lot in common with their colleagues out of their work.

Regarding finances and remuneration, it seems that teachers in Kyrgyzstan have come to terms with the fact that they almost always have low salaries that only a few teachers with extensive work experience expressed their dissatisfaction and mostly these are the teachers with long experience. But we do not exclude the fact that most of the teachers work part – timely in other places and try to cover their daily expenses, also they regularly need to take loans because of insufficient salary. We do not blame school administrations for not giving due attention to their teachers, but we encourage them to be open to them, to study and develop programs taking into account the government's capabilities that support teachers morally and financially. The research results can become the main object of future research and a topic for further detailed study.

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Integrating Digital Technologies in Teaching Reading through ESP to Engineering Students

Vita V. Vonog*[a], Vadim V. Kolga[b], Irina V. Batunova[a], Svetlana V. Ryzhova[a], Ekaterina I. Lobyneva[a], Elena A. Nikitina[a], Albina Yu. Nikolaeva[a], Olga A. Prokhorova[a], Tatiana V. Stupina[a], Vera N. Yurdanova[a], Olga V. Gryadunova[a] and Ekaterina V. Gerasimenko[a]

[a]*Siberian Federal University*
Krasnoyarsk, Russian Federation
[b]*Reshetnev Siberian State University of Science and Technology*
Krasnoyarsk, Russian Federation

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Abstract. Currently, the most crucial social order is to prepare specialists with a number of professional and general cultural competencies. Taking into account that reading is believed to be both a part of a basic literacy and an important component of engineering profile student competences, it is essential to plan teaching reading in the university curriculum. The paper examines the distinguishing features of teaching reading in a foreign language to non-linguistic students in the digital age. The authors present a combination of the traditional reading techniques/strategies and the new ones as an effective means of teaching reading since the digital age has changed the characteristics and the notion of reading. A comprehensive theoretical background of teaching reading is provided. Apart from reading models (bottom-up, top down), types (synthetic, analytical, independent, guided, study, communicative, extensive, intensive) and strategies (scanning, skimming; inferring, monitoring or clarifying, searching and selecting, visualizing and organizing, questioning, SQ3R/SQRRR), special attention is given to the characteristics of the professional texts for students and the types of text tasks. In addition, the authors use the basic principles of language education in the framework of digital technologies in teaching reading.

Keywords: digital technologies, teaching English for specific purposes (ESP), students of engineering profile, teaching techniques and strategies, professional authentic texts.

* Corresponding author E-mail address: vonog_vita@mail.ru

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Интеграция цифровых технологий в профессионально-ориентированное обучение чтению студентов инженерных направлений

В.В. Воног[а], В.В. Кольга[б], И.В. Батунова[а], С.В. Рыжова[а], Е.И. Лобынева[а], Е.А. Никитина[а], А.Ю. Николаева[а], О.А, Прохорова[а], Т.В. Ступина[а], В.Н. Юрданова[а], О.В. Грядунова[а], Е.В. Герасименко[а]

[а]Сибирский федеральный университет
Российская Федерация, Красноярск
[б]Сибирский государственный университет науки и технологий имени М. Ф. Решетнева
Российская Федерация, Красноярск

Аннотация. В настоящее время актуальна задача подготовки специалистов, обладающих профессиональными и общекультурными компетенциями. Учитывая, что чтение является базовым навыком функциональной грамотности, а также важным компонентом формируемых компетенций у студентов инженерных направлений, подчеркивается необходимость тщательного планирования обучения чтению в вузе. В статье рассмотрены особенности обучения чтению на иностранном языке студентов нелингвистических специальностей в эпоху цифровых технологий. Авторы представляют совокупность современных и традиционных методов/стратегий чтения в качестве эффективного средства обучения, следуя изменениям в его характеристиках и понятиях в эпоху цифровизации. Дана общая теоретическая основа обучения чтению. Особое внимание уделяется как моделям (снизу вверх, сверху вниз), типам (синтетическое, аналитическое, независимое, управляемое, учебное, коммуникативное, ознакомительное, изучающее), стратегиям (сканирование, беглый просмотр, вывод, мониторинг или уточнение, поиск и отбор, визуализация и организация, чтение с вопросами, SQ3R /SQRRR (Оценить – Задать вопросы – Прочитать – Запомнить – Подвести итоги) чтения, так и специфике текстов профессиональной направленности, типам текстовых заданий. Кроме того, авторы используют основные принципы языкового образования в рамках внедрения цифровых технологий обучения чтению.

Ключевые слова: цифровые технологии, обучение английскому языку для профессиональных целей, студенты инженерного направления, методы и стратегии обучения, аутентичные тексты профессиональной направленности.

Научная специальность: 5.8.7 – методология и технология профессионального образования.

Introduction

For a very long time, reading has been believed by far to be "the most significant life skills and even the most essential of the other four skills in a second language, especially when English is either a second or a foreign language" (Amirian, 2013: 23).

It is true for the 21st century, as well. "The skills required in a digital society include first of all communications skills of reading, speaking and writing coherently and clearly" (Bates, 2019). Digital media make it possible for millions of people to have "access to texts that would otherwise be beyond their reach" (Baron, 2017: 19). So, to do the job and interact with the community, to achieve the aims, to improve knowledge, and therefore to have potential and to be successful in this digital age, people need to gain a thorough understanding of vast information in all its forms. Thus, language proficiency (in English) as a component of basic literacy – "the ability to read, write, listen, and speak – is even more important than ever" (21st Century Skills, 2003).

Moreover, the skills needed to negotiate the complexities of life change as society changes. Although the four basic language skills are paramount, today people must be able to "decipher meaning and express ideas through a range of media" (21st Century Skills, 2003). Nowadays, it has commonly been assumed that digital technology is affecting what we mean by "reading". The meaning of the verb "to read" under the influence of digital technologies shows itself in changing the reading nature and reading process. Reading in the digital age is characterized by loss of concentration due to distraction; exchanging linear reading for searching or skimming; "shrinking expectations about reasonable text length, and assumption that "reading" should include instant access to other resources, etc." (Baron, 2013). The up-to-date notion of reading structurally privileges locating information over deciphering and analyzing more complex text. (Baron, Naomi, 2013).

Undoubtedly, the abovementioned changes become increasingly important in planning educational curricula.

On the other hand, English for specific purposes (hereinafter ESP) teaching has also undergone a myriad of changes due to the digital technology having facilitated and augmented language learning to a great extent. Being of the highest importance, teaching reading is not an easy task. Especially when reading is taught to a non-native speaker of English it involves "distinctive challenges and problems at any existing level of studying" (Amirian, 2013: 25). The major concerns of teaching ESP reading have always been connected with the analysis of needs and texts, and learners' preparation to "effectively communicate on the tasks set at the classes or situations at work" (Amirian, 2013: 26). With the advent of digital technologies, the conventional teaching methods have been complemented by providing digital tools and ensuring access to digital libraries as well as dictionaries and thesauri. This integration facilitates the teaching process a lot and changes the role of teacher, at the same time.

Taking into account the importance of teaching ESP reading and changes both of this process conditioned by digital technologies and of the nature of reading itself, the study presents an attempt to analyze the distinguishing features of teaching the students of non-linguistic universities to read a foreign language in the digital age.

Theoretical background

Being an important skill reading is discussed by many scientists from Russia and abroad. The grounds for the essence of this skill and the reasons motivating its use can be read in the work of Grabe and Stoller (2001), Bernhardt (2000). The attention to such major points as the concept of reading and the elements it consists of is described in the researches made by Dora Chostelidou (2012), Grabe & Stoller (2002), CEF (2001), Dudley-Evans and St John (1998), Jordan (1997). The problem ap-

pearing when reading is analyzed by Freese (1997), Sellers (2008).

The necessity to develop reading as a way to get the necessary information is determined by the extensive use of English in academic literature along with the growth of electronic communications. Therefore, the professional environment requires specialists with good reading skills, which in turn affects the requirements for undergraduates and postgraduates, described by Mc Donough and Shaw, 2003; Grabe and Stoller, 2002; Grabe, 2009.

The issue of teaching ESP in linguodidactics and teaching philosophy has been studied for the last several decades. It is the subject of studies in the works of well-known Russian scientists like Folomkina S. K., Galskova N. D., Roshchina E. V., Zimnyaya I. A. et al. Generally, they consider reading as a basis for teaching other skills meaning it both a way to form professional communicative competence and an essential condition for developing a successful specialist. Zimnyaya I. A., Klychnikova Z. K., Folomkina S. K. esteem reading within the cognitive approach. However, S. K. Folomkina distinguishes the special features of the professionally-oriented texts such as motivating content, authenticity, completeness, information intensity and others. Yu. V. Chicherina adds correspondence of the texts with students' needs, their cognitive and communicative interests and speech abilities. While according to S. I. Sharapova's opinion valued characteristic of the material is learner's aspiration to get interesting and essential for their future profession information.

The discussion of teaching reading for ESP to the students of university is presented in the publication of E. N. Grinko. The author raises the problem of the authenticity of texts, defines their distinctive features and specifies the stages of reading relying on the learning aims. The similar issue is considered in the study of I. N. Tabueva who focuses on teaching ESP reading in a non-linguistic university. The researcher reveals the concept of this aspect and suggests some methods and means to conduct such classes and control them. Moreover, different approaches are considered to make the learning process more efficient. Teaching to read professionally oriented texts in linguistic university without the use of computer technology was widely discussed by such authors as A. S. Balakhonov, N. N. Nizhneva, E. V. Krylova, S. N. Makarova, M. V. Valova et al.

It should be noted here that the theoretical professionally oriented part of foreign language reading was developed by T. S. Serova (1988, 1989) and later it was continued in the works of T. G. Agapitova (2000), M. S. Grishina (2003), S. G. Ulitina and others. The review of methodological literature shows publications devoted to the description of teaching foreign language reading peculiarities. One of the relevant studies belongs to Yu. N. Buzina (2000) who analyses the problem of organizing students' self-directed learning on English texts in economics. While S. A. Fomin considers the possibilities of using computer programs for teaching learners to skim engineering and economic texts.

Apart from that Russian and foreign literature on methodology highlights some aspects of learning a foreign language using computer technologies. For example, D. D. Klimentiev focuses on adults' autonomous computer training to read in English. E. L. Dmitrieva developed a methodological basis for distant learning reading in foreign languages hosted by computer telecommunications. The problem of designing a computer textbook for universities is presented in the study of M. R. Melemud.

The study of the organization of work with professionally oriented texts in teaching a foreign language using digital technologies is the subject of the research efforts of such Russian and foreign scientists and educators as V. V. Vonog, O. A. Prokhorova, Yu. I. Davydenko, I. Yu. Konoreva, S. V. Titova, E. S. Polat, P. V. Sysoev, L. V. Shkerin, V. A. Shershneva, V. N. Sidorov, T. V. Sidorova, K. V. Safonov, I. B. Korotkina, E. V. Talalakina, K. Facer, Otto Peters, J. Watson, D. Whitelock et al.

The authors of the research paper "E-learning in Tertiary Education: Where Do we Stand?" consider E-learning as informational and communicational technology (ICT) designed to boost and/or inspire learning in tertiary education. It covers a wide range of systems, from students using e-mail and accessing

course work online while following a course on campus to programmes offered entirely online.

Otto Peters in his investigation "Digital Learning Environments: New Possibilities and Opportunities" convinces that "Tertiary education institutions generally feel that e-learning has a broadly positive effect on the capacity of teaching and learning, although few have been able to offer detailed evidence. There is much indirect evidence, including student satisfaction surveys, but these may not be enough to offset the prevalent doubt about the pedagogic value of online learning among students and academics. Digital learning environments open up new opportunities and chances not only for heteronymous but also for autonomous learning". (Peters, 2000: 17)

The issue of digital storage of an unlimited amount of authentic information is discussed by Watson (2008). Special concern is paid to increasing the autonomy and independent work of the student when working with hypertext and web pages by Titova, 2017; Sysoyev et al., 2015; Prokhorova, Vonog, 2015; Whitelock, 2008.

There are some papers where authors identify problems, propose teaching methods, and assess the advantages and disadvantages in the context of digitalization. For example, Yu. I. Davydenko in the article "Teaching autonomous reading in a foreign language at a technical university: criteria for selecting text material" (Davydenko, 2017: 54) identifies the problems that hinder the effective teaching of a foreign language and suggests ways to solve them by creating an information and communication learning environment for learning. In his other work titled "The learning of autonomous foreign language reading in technical university: criteria for the selection of textual material" (Davydenko, 2017: 55) Yu. I. Davydenko reveals the advances of the technique enhancing the impetus of students, which in turn, tends to a meaning increase in the effectiveness of foreign language learning. The article also deals with the criteria for material selection in teaching students to read profession-oriented texts in a foreign language.

The role of increasing students' interest and motivation in learning foreign languages through a variety of educational materials, different from traditional ones, is studied by Polat (2010) and Shershneva et al. (2016).

L. A. Sobinova in the article "The content of the methodology for teaching professionally oriented foreign language reading for students of a technical university using an electronic textbook" (Sobinova, 2017: 94) suggests a methodology for teaching professional texts using an electronic textbook. This methodology includes four main blocks: target (setting goals and related tasks), methodological (defining approaches, teaching principles and creating favorable pedagogical conditions), meaningful (language and speech material) and effective (nomenclature of skills being developed).

The relevance in the application of information and communication technologies in teaching autonomous reading of authentic materials in a foreign language, primarily in functionality, in an orientation towards using real communication is determined by Prokhorova, Vonog (2015). According to the research results in the article "Model of teaching reading professionally-oriented texts in the context of digitalization" (Vonog, Polikarpova, 2019: 37) represent a model (algorithm) for independent reading teaching within the blended learning course "Foreign Language for Graduate Students (English)" placed on the LMS Moodle platform.

Methods

With the drastic changes in digital technologies and tools there appeared the necessity to use new methods of teaching reading professional texts. The main focus for university students is reading mastering and understanding specific content synchronically, for teachers it is choosing the most productive tool and/or resource from a great number being available to date.

According to the curriculum including "Foreign language" (English) and "Professional foreign language" (English) practicals, the competence-based approach is considered to be leading in teaching students of engineering courses in Siberian Federal University (Krasnoyarsk, Russia). It is essential for each student to get some knowledge, develop special skills

and abilities, build depth and breadth in his major. Thus, to teach reading through ESP we should be critical in choosing information resources or data widely used by engineers and vital for their professional areas. "When selecting texts, three principles are preferable:

1. *Professional significance*. The reader is not interested in all the information in the texts offered to him, but only the information that has professional value, i.e. it is able to satisfy reader's informational and cognitive needs.

2. *Communicative orientation.* Textual utility and integrity reflecting the real activity of indirect communication in modern engineering and professional sphere are notable.

3. *Authenticity.* The texts for teaching reading should be authentic according to their structure, content, and design. At the same time long texts may be shortened so that they do not change the lexical, grammatical structures, and integral perception". (Drozdova, 2009: 71).

For reading we used such authentic materials (journal articles, monographs, theses, reports, patents, manuals, leaflets, interviews, blog posts, e-books) which had been filtered through the subject content (thermal, electrical, mechanical, transport and civil engineering, physics, radio electronics, architecture, design, military), exploitability, readability, variety, and presentation criteria; the elements of a digital learning platform MOODLE; online courses of Coursera; a video conferencing service Zoom (for one-on-one meetings, group video conferences and screen sharing).

The nature of reading process is determined by the following methodological principles: communicative orientation, informative orientation, improving learning outcomes. They help develop a pedagogical "tools set" for teaching reading through ESP.

The elements of both bottom-up (scrutinizing vocabulary and syntax) and top down (obtaining global meaning of the text through the "clues") models of reading were processed with the students of Siberian Federal University, namely undergraduate and postgraduate (master's level) students of Polytechnic School, School of Engineering and Construction, School of Engineering Physics and Radio Electronics, School of Military Training, during in-class/home/MOODLE/Coursera/Zoom periods, preparing for their gist reading and translating parts of the final examination in the course "Foreign language" (English). These parts were assessed according to three analytical criteria: lexical resource, grammatical resource, accuracy. Senior lecturers and associate professors from Department of Foreign Languages for Engineering Science paid attention to a range of knowledge, skills and understanding of everyday vocabulary, set expressions, proper names, technical terminology, temporal structure of the source text, syntactic complexes, use of grammatical transformation (substitution of word forms, parts of speech replacement, changes in word order, sentence members, sentence types and types of syntactic relations, addition, omission), narrative logic and style.

The nature of reading authentic materials with specialized terminology and general terms is rather bewildering. It needs conscious understanding and assessing of strengths and weaknesses, diagnosing barriers to reading development of non-linguistic students. Such diagnostic assessment will be equally beneficial for both learners and teachers.

In this paper an overall construct of reading professional materials was valued in details according to four attributes, rings/layers represented in Fig. 1. The diagram offered by Sainsbury et al. (2006) visualizes the main reading processes: decoding, comprehending, responding, analysing.

"Decoding" ring indicates that students' ability to translate English written words into their spoken Russian form underlies all other reading processes within it. Non-native speakers of English decode a source text and investigate such areas as visual memory, use of analogy, phonological awareness (in aloud reading).

In a "comprehending" layer grammatical and lexical knowledge of ESP learners is combined with recognising the written form of the English word, so that the students can attach meaning to the word/sentence/passage/text.

The third ring is "responding". Here, the reader engages intensively with the text, responds constructively to it in order to build a personal understanding, to make meaning. For

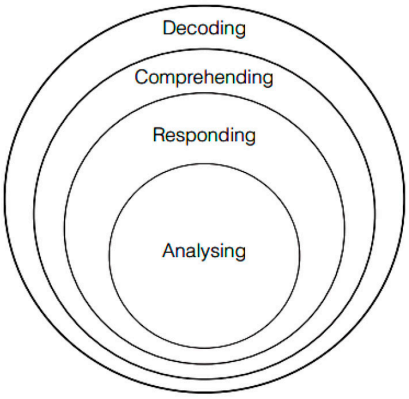

Fig. 1. Diagram of the construct of reading

teachers, firstly, it is preferable to use shared and guided reading with modeling the processes of making sense of ideas and themes in English texts. Secondly, it should become the study of special (technical) content.

"Analysing" layer is related to the reader stepping back from the meaning. Active reader considers authorial techniques and literary traditions used in the text production. That is more conscious part of reading.

Such assessment gave rise to indicators that guided teaching reading professional texts, identified problematic areas precisely, prescribed remedial actions, directed reading activity and university students' progression in reading generally.

The crucial part of the paper is to make reading purposeful. The importance of natural identifying the purpose is highlighted. It should not be just explained to the students. The best way is to use the context in which the reading takes place. If a learner knows he is reading a text to find the best way of treating metal billets, to judge the suitability of certain methods of measuring radio interference, to explain the argument of using carbon tetrachloride to a colleague, to write a detailed critique of non-renewable energy sources, for example, the task will be appropriately approached without needing specific detailed instructions.

To characterise the ways used by students to construct meaning from the written English words in their engagement with a text four reading aspects were intensified, i.e. "forming a general understanding", "examining content and structure", "making reader-text connections", and "developing interpretation".

In the present paper the model of students' online reading behaviour was emphasized.

Online readers are commonly affected by different factors before and while the act of reading: their language skills, web skills, vision skills (seeing possibilities), prior belief and knowledge, reading styles, reading goals and strategies. Nowadays learners are confronted with web technologies offering potentially vast amount of new research tools and online professional texts. During online reading undergraduates and postgraduates of Siberian Federal University handle multiple technical texts in English at MOODLE and Coursera platforms, concurrently displayed texts of various web pages. Students sort, navigate, respond (can summarise, copy and paste any pieces of the text), file the information. After that, in general, they produce any written output.

The key elements of online reading were stressed as the list of seven computer processes: "start, non-task activities, retrieving or reviewing navigation goal, visiting the website, working with the writing task, non-task activities, stop" (Harrison, 2004: 137).

To make reading of technical texts more effective, to improve non-native speakers' understanding about data and facts they have read we used in our research such methods as scanning, skimming; inferring, monitoring or clarifying, searching and selecting, visualizing

and organizing, questioning, SQ3R/SQRRR (Survey, Question, Read, Recite, Review).

Results

The development and application of modernizing technologies within the framework of technologization of all spheres of human activity requires the development of new techniques in foreign languages teaching, forming a new educational space. Teaching foreign languages theory and methodology require the development and application of new forms of education that can function in a new information space using computerized network technologies. Requirements for digital communicative competence of foreign language teachers are growing rapidly with the improvement of computer technology, software, and databases. University professors are known to have become witnesses and direct participants in a sharp breakthrough developing and using these technologies. The impetus for such changes could be assumed to be partly the threat of the corona virus infection pandemic, the need to introduce distance learning. And as a result of the above mentioned reason, the emergence of large cellular companies that develop applications for users, which a teacher can compose and put into practice his personal training programs, such as MOODLE, use ZOOM in organizing distance learning on a personal computer while staying at home in self-isolation. The goal of teaching a foreign language course at a non-linguistic university is to master students' communicative competence (i.e., the ability to correlate linguistic means with specific areas, situations, conditions and communication tasks), the level of which at certain stages of preparation allows to use the language in oral and written communication, and for self-education, reading scientific texts.

In modern conditions, reading in a foreign language as a form of speech activity and as an indirect form of communication is, according to many researchers, the most necessary for graduates of technical specialties of universities. The great importance of this type of speech activity is necessary for the replenishment of professional knowledge, development of other communication skills. Specialists should be able to select and interpret the important information from special texts. Therefore, student must drill their reading abilities during studying process at all stages of learning. It is known that reading is a motivated, receptive, mediated type of speech activity, proceeding in the internal plan, aimed at extracting information from a written provided text, proceeding on the basis of the processes of "visual perception of the resource of an arbitrary short-term memory and recoding of information". (Smolyaninova, 2020: 1431). To teach reading professionally orientated texts, it is required to select professional literature, create the latest textbooks and e-courses.

There are many factors according to which professionally oriented texts are chosen: authenticity, professional content, correlation with the university curriculum, the relevant professional terminology subsistence, the feasibility of linguistic and professionally oriented information content of the text for a target audience and information content. By means of computer technology in the selection of text material, the teacher today has great opportunities. Reading texts should be processed and adapted, that means, use: shortening, replacing complex grammatical structures with simpler synonymous ones, preserving terminological vocabulary, internationalisms unfamiliar but understandable lexis. Texts should be accompanied by a vocabulary list for the text, use illustrations, footnotes, tables, diagrams, and graphics. The adaptation of the texts assumes some changes in content and grammatical structure as a result the text loses its authenticity and becomes subordinate. Positive aspects of such adaptation are required by individual learners' needs, their level of foreign language and a particular learning aim. The lecturer's objective is "to preserve the integrity and special features of authentic scientific and technical texts, including the word order and grammar structures" (Goryunova, 2011: 62).

According to current educational requirements reading is to be taught to student not only as an autonomous type of speech activity but also as a source for extracting information from the text for solving a specific language problems applying certain reading techniques.

The principle of completeness of the extracted information is distinguished: study, introductory and search-viewing reading. Using the capabilities of the computer to create the appropriate educational material is quite wide, so the preparation of exercises to ensure reading comprehension in MOODLE is very promising. Analytical and synthetic reading requires the use of logical operations. Intensive and extensive reading requires a depth of penetration into the text content. Learning reading / reading for detail or intensive – by target settings. Used in training and introductory reading / skimming, scanning, search and viewing reading. Internet access provides selecting the required level of text in terms of complexity for each type of reading. All of the above methods of teaching reading are actively used in the digitalized space.

Learning reading should provide the opportunity to understand the main and optional facts of scientific texts. In this type of reading, student must have the skill to translate a text with a terminological dictionary and guess the meaning of words by context; realize logical connections in a sentence and between parts of the whole text. Using computer technology, students should be capable of using electronic terminological dictionaries to find the necessary vocabulary quickly, selecting terms from their field of knowledge, knowing the abbreviation, using Wikipedia to find the necessary information. Introductory stage means quick reading for understanding the text content and the ability to choose the main thing from the context.

Skimming is a method of reading the article quickly and obtaining the main idea of a passage. A typical skimming task would be several general questions about the content and the theme of a text. The students would attempt to find the answer quickly in a very short period of time. Such 'speed-reading' or accelerated reading is mainly concerned with finding key points, basic structure of the text. In comparison with skimming scanning is a more detailed method of reading. It involves the whole text processing, searching the clues from the textual layout and the content that will enable students to focus on smaller sections of the passage. Scanning can be summarized as fast reading for gaining individual pieces of information, e.g. numbers, dates, years, facts and other useful details which can be applied in further speaking and written practice.

For future specialists in the scientific and technical field of knowledge, this skill is necessary to work with the latest literature, in the search for the necessary information on the Internet.Time limitation for understanding special texts is a very useful exercise in drilling the reading *skills.* Students should be prepared to ignore unknown words and grammar constructions during introductory stage and pay attention to familiar and key words. The aim is to teach students to synthesize the main idea of the text from the obtained information.

One more important method which allows teaching reading *is search and viewing reading.* It enables students to find out specific keywords and obtain the necessary information from them. To achieve the goal, they are to realize the text structure, read the titles, subheadings, individual paragraphs. Development after textual exercises for information search allows you to effectively teach viewing reading, the skill of which is necessary to find the information quickly required by a specialist.

The aim of the teacher is to make students better readers, to teach them intensive reading, i.e. analyzing text closely and carefully with the objective to understand as much detail as possible in a rather limited period of time. This method usually involves reading the same text a number of times in order to find more useful lexis and important grammar. This is actually the way how competent language users might read authentic texts such as a manual, a leaflet with guidelines or an instruction. Text completion, answering special and general questions, searching for the particular details and necessary information, making a detailed analysis, receiving feedback and other learning tasks help students develop intensive reading skills.

Another effective method for students to become more productive and independent language learners is to include some extensive reading during the learning process. The purpose of reading authentic and professionally oriented texts is to widen passive and active vo-

cabulary, increase student autonomy and overall linguistic confidence, which later influences and improves their skills in other language areas. Students could be given the possibility to choose relevant articles for their personal and professional needs. The more learners read, the more they pick up specific vocabulary and grammar items, terminology needed for further analysis and extending background knowledge. Extensive reading allows stimulating students' independence when choosing the resources, techniques and methods from students' side. Learners act autonomously, analyze the results, define the future perspectives, and use adequate ways of achieving the goals. So, the arguments for actively encouraging students to read more in target language are very strong. The texts for extensive reading are usually authentic without necessary adaptation for learning needs that is why the number of these kinds of texts is pretty high. "Modern information technology presents a text in a form of a hypertext, which includes smaller passages as links following which the student can obtain supplementary information. There are many language corpuses demonstrating how the word is used in various contexts" (Smolyaninova, 2019: 1729).

To understand the text, there are a number of exercises aimed at removing lexical and grammatical difficulties. These are traditional types of exercises, for instance: learning new terms and vocabulary, mastering grammar subfields found in text, paying attention to the text title and illustrations. This can be an assignment to exchange your background knowledge on the topic to which the text is devoted. Such types of exercises are translation of sentences with new words, pairs searching, finding a word and its definition, defining antonyms and synonyms for the certain words, derivative parts of speech with a certain word-formation element formatting.

One more important exercise is to compose phrases from the certain words according to the notion and make sentences with the learned words. For example, a student may have the task to translate English sentences having words or word combinations in Russian which are given in brackets. When working with the text, you can use silent reading of the text to test your assumptions made in the pre-text stage. An effective task in teaching reading is dividing the text into semantic parts, drawing up a text plan, searching for English equivalents of phrases in the text. These can be exercises to fill in the gaps in the text with deliberately omitted words, determining the correspondence of the proposed information from the text (true/false/ not stated), giving the corrected variant which corresponds to the text. Also, the following tasks should be mentioned: to complete sentences from the worked out theses, find statements with learned grammar structure in the text, provide sentences analyses, translate certain pieces into Russian, look for sentences, stating the main idea from the text. It is possible to use selective or complete reading of the text loudly, as well as passage or the entire text translation into mother tongue. There are exercises that effectively help to understand the text content, for instance, drawing up a schedule, a diagram, a short retelling of the text. When mastering computer technologies, the teacher has the opportunity to create such exercises on an electronic platform and use them effectively in teaching reading.

As it was mentioned above according to the latest research reading authentic and adapted texts in target language is the essential skill for the students of engineering science. This widens professional knowledge, develops communication skills. Even though reading is a receptive skill, its result is applied in productive language skills: speaking and writing. This fact is particularly important for university students taking part in various international conferences and publishing scientific articles, based on their research. They should be taught to extract the necessary facts from the text to solve a specific speaking task.

Consequently, all traditional methods used in teaching reading are suitable for application in digital environment. Thus, in the world of information technologies, there are great opportunities for the selection of texts for the creation of both e-learning courses in reading on the platforms provided by universities, and for the compilation of textbooks with a carefully developed set of exercises. In the digitalized

information space, there are ample opportunities for teaching both studying, introductory, and search-viewing reading. Learning to read should include a system of exercises that train students' ability to improve their reading skills; for this the teacher has many network tools at his disposal for organizing teaching of all types of reading. Modern technologies make it possible to provide equal access for all students to the Internet resources, computers, search for the necessary information quickly and use actively the knowledge gained in work. The ability to implement the basic principles of linguodidactics in the framework of digital technologies, that is: visibility, accessibility, individual approach. Practice shows that the overwhelming number of university professors used this opportunity, a lot of program courses have been created for students. But this direction requires further study and development because: "The created programs reflect mainly an intuitive (scientifically unsubstantiated) understanding of the use of computer programs in language teaching and are not part of the worldview that allows building systemic learning based on computer and network technologies and can be regarded as experimental or as part of an unfinished project" (Gartsov, 2007: 41). Probably, teaching the students of pedagogical universities in the elements of programming can provide a breakthrough in this matter.

Conclusions

To come to the point of the investigation, the authors believe that the process of digitalization that is developing in modern education has affected all aspects in general and reading in particular. Modernizing digital resources integration into educational activities in higher education has caused a rise in the quality of the students' educational environment in technical schools. Moreover, it enables students to acquire skills and knowledge in a more understandable and accessible environment, and to develop their independent work. As a whole, it has increased students infatuation with such a discipline as "Foreign language", stimulated the work of students for the sake of language mastering in the field of their professional competence.

The difficulties of using digital resources in reading are more often associated with orientation in a huge variety of modern online resources. It is reading that creates more issues in solving communication problems than, for example, speaking. Therefore, the study proves that the quality of knowledge acquired by students depends on the method and type of digital reading training in the MOODLE system with free access to the Internet.

Reading constitutes an influational piece of students' foreign language skills. Professional-oriented texts and the appropriate combination of traditional and modern tasks bestow the advancement of reading professional texts level. This means that this approach to reading is the most successful in developing this skill. It allows students to learn critical, more competent reading, distinguish complex grammatical constructions, stylistic techniques, terminological vocabulary, phraseological units, inversion, elliptical constructions, etc. Students can perform text analysis using techniques that allow them to distinguish different semantic meanings, types of texts, and understand the smallest technical nuances of professional texts. What is more, the use of digital resources gives the teacher a wide scope for using various training exercises that develop students' skills in working with text – scanning, skimming, comprehensive, extensive and intensive reading, etc.

Digital resources help students organize independent work when reading and understanding texts, find the necessary information at a convenient time for them.

Thus, the use of digitalization in reading skills allows students not only to master this skill at a high level, but also through reading, to expand their professional skills, which makes them demanded professionals for future workforce. The contribution of this research can play a significant role for the future integration of digitalization in reading.

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The Strategies of Best Practice Applying in Education: Criteria Approach

Altynay K. Zhuman[a], Olga G. Smolyaninova[b], Zhanbol O. Zhilbaev[c], Lyailya S. Syrymbetova*[c] and Gulden N. Akbayeva[a]

[a]*Karaganda University named after academician E. A. Buketov*
Karaganda, Kazakhstan
[b]*Siberian Federal University*
Krasnoyarsk, Russian Federation
[c]*Pavlodar Pedagogical University*
Pavlodar, Kazakhstan

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Abstract. This article considers the criteria for evaluating the best international experience practices in education and substantiates these criteria as one of the strategies for applying the most successful practices to enhance and update innovation processes in a particular national educational system. This context allows the authors of the article to analyze the indicators of a number of international comparative studies, specifically: the GCI (Global Competitiveness Index) of the World Economic Forum (WEF), the study "Global Competitiveness of Russian Education", PISA, TIMSS, PIRSL and TALIS, as well as PIAAC. The indicators of the latter have been used for the correlation analysis between the learning outcomes of schoolchildren and adults. In order to substantiate the relevance of the proposed criteria, the authors have used Pearson's linear correlation and Spearman's rank correlation methods to establish the closeness degree of the relationship between the results of the GIC and PISA, TIMSS, PIRSL, as well as between the results of PISA, TIMSS, PIRSL and TALIS. The results have been analyzed in the logic of correlation, and in order to identify the sustainable success of the indicators, the same results have been studied in their dynamics. Thereby the published results of three cycles of all the above studies have been subjected to analysis.

According to the calculations, the authors have conducted an independent examination of the proposals; the final results demonstrated a positive assessment of the authorities in the field of education in Kazakhstan and Russia.

This article describes the results of a local study in the field of successful educational practices. In order to remove the identified contradictions on certain aspects, this study seems to be promising for further scientific discussion.

* Corresponding author E-mail address: miss.syrymbetova@mail.ru

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Стратегии применения лучшего опыта в образовании: критериальный подход

А.Қ. Жұман[а], О.Г. Смолянинова[б], Ж.О. Жилбаев[в], Л.С. Сырымбетова[в*], Г.Н. Акбаева[а]

[а]Карагандинский университет им. Е.А. Букетова
Караганда, Казахстан
[б]Сибирский федеральный университет
Российская Федерация, Красноярск
[в]Павлодарский педагогический университет
Павлодар, Казахстан

Аннотация. Изложены критерии оценки лучшего международного опыта в образовании и представлено обоснование стратегии применения критериального подхода для анализа успешности практик активизации и актуализации инновационных процессов в конкретных национальных образовательных системах. Именно в этом контексте авторы статьи проанализировали индикаторы ряда международных сравнительных исследований, а именно: ГИК (индекс глобальной конкурентоспособности) Всемирного экономического форума (ВЭФ), исследования «Глобальная конкурентоспособность Российского образования», PISA, TIMSS, PIRSL и TALIS, а также PIAAC. Индикаторы последнего из них были использованы для корреляционного анализа между результатами обучения школьников и взрослых. Кроме того, в целях обоснования релевантности предложенных критериев авторами применены методы линейной корреляции Пирсона и ранговой корреляции Спирмена для установления степени тесноты связи между результатами ГИК и PISA, TIMSS, PIRSL, а также между результатами PISA, TIMSS, PIRSL и TALIS. Итоги вышеуказанных исследований проанализированы в логике корреляции и для выявления устойчивой успешности показателей эти же результаты были изучены в их динамике. При этом анализу подвергнуты опубликованные материалы трех циклов всех вышеуказанных исследований.

Также авторы посчитали целесообразным провести независимую экспертизу предложенных критериев, которая дала положительную оценку авторитетных экспертов в области образования двух стран – Казахстана и России.

В целом данная статья описывает результаты сравнительного международного исследования в области успешных образовательных практик. В целях снятия выявленных в процессе работы противоречий по отдельным аспектам данное

исследование, по мнению авторов, представляется перспективным для дальнейшей научной дискуссии.

Ключевые слова: критерий, лучший мировой опыт, устойчивость и эффективность опыта, международные сравнительные исследования в образовании.

Научная специальность: 5.8.7 – методология и технология профессионального образования

Introduction and literature review

Talking about best practice in education in the present article, first of all it means international experience. Transparency and openness as the principle of modern Kazakh education determine its involvement in the global educational system. For this purpose, the practice of other national systems in realization of pedagogical ideas and strategies arouse interest. Therefore, it is important that successful practice of one country can be applicable and effective for others as well. As a rule, best or internationally accepted practices are chosen for these purposes. Primarily, the best practice in education can be defined as an experience of one country, the middle and high educational system success which are proved by the results of international ratings.

From this perspective the article attempts to answer the questions: "Which country's practice can be considered as the best one?" and "To what extent is it applicable in the specific situation of Kazakhstan?". There can be numerous strategies for searching answers to the given questions. We choose one of them: development and explanation of the criteria of best practice in education.

For this purpose, we studied the criteria of the global competitiveness report (GCR) and indicators of international comparative studies (PISA, TIMSS and PIRLS), also the criteria presented in the analytical report "Global competitiveness of Russia education". The latter is meaningful due to the historical commonness of education systems of two neighboring countries – Kazakhstan and Russia.

Initial position of the research is analysis of the definitions of "criterion". There are different interpretations of the given term concept. In the definition dictionary by Ushakova D.N. from Greek "criterion" means: 1) "solution tool", "distinctive feature"; 2) measure; conventional measure, pursuant to measurements of things, allows to give evaluation (Ushakov, 2013). According to the scientifically based definition by Russian scientist Kushvinova I. A. criterion is the quality, property or features of a studied object, allowing judging about its condition, development level and functioning (Kuvshinova, 2004).

As Zagvyazinsky V. I. points that criterion is generalized constant of evolving system upon which range of features can be highlighted, and according to which indicators are identified, and indicators are expressed by quantitative or qualitative characters formed of quality, internals, studied object features, in other words the measure of criterion formation (Zagviazinskii et al., 2006). Usually, criteria act in relation to indicators as general to particular, including the whole group of indicators, which characterize the object from qualitative and quantitative side.

The most widespread and conventional notion is understanding criteria as an element on the basis of which evaluation and classification are done (Skvortsov, L. I., 2009), advantage of any choice compared with others is highlighted, the correspondence of the target goal result is checked or evaluation of its degree realization is given (Makarova, O.Y., 2013).

They are used for evaluation, and each criterion gives a different view to the subject property, also they are used outside of the evaluation for management monitoring, strategic planning and development of interventions (OECD 2019).

According to the standards of OECD development assessment quality, for the effective evaluation criteria should be:

- contextualized (understandable, as for estimator, so for appraised object);

- they have to cover issues of stakeholder and be appropriate to the context of assessed object (Multi-criteria analysis, 2009).

Indexes, which show changes according to the particular time for each criterion, are also used for evaluation along with criteria (MCPFE, 1998). Indicators are qualitative quantitative or descriptive parameters which can be measured according to the criteria. Indexes determine information which are necessary for evaluation and monitoring (ITTO, 2016). Thus, each international organization points out the key criteria and indicators to evaluate the competitive edge of the country. For instance, the structure of the world economic forum (WEF) is: there are three sub-indexes, which set the general direction of the research. Each sub index is divided into criteria among which weighing coefficient is distributed. The Global competitiveness report (GCR) was developed by WEF in 1979 for obtaining the growth pattern of the global economy. The competitiveness was considered as a basis of the report.

There are many different characteristics and counting methods developed. The GCR mathematically captures the development dynamics of countries in comparison with each other. It includes not only economical and financial findings, but also the analysis of political and social decisions, innovative progress, changes in health service and education.

Today the GCR is used in 140 countries. For these purposes 12 main pillars are used. In 2017–2018 the evaluation was done by next pillars (Klaus Schwab 2017, 2018):

1. Institution
2. Infrastructure
3. Macroeconomic environment
4. Health and primary education
5. Higher education and training
6. Goods market efficiency
7. Labor market efficiency
8. Financial market and development
9. Technological readiness
10. Market size
11. Business sophistication
12. Innovation

In the reports of 2018 and 2019 numbers of pillars were kept however there were changes in names of indicators as:

1. Institution
2. Infrastructure
3. ICT adoption
4. Macroeconomic stability
5. Health
6. Skills
7. Product market
8. Labor market
9. Financial system
10. Market size
11. Business dynamism
12. Innovation capability

It seems to be fundamentally important to separate the "Health" pillar into a separate nomination and reorient the indicators "4. Health and Primary Education" and "5. Higher education and professional training" to "6. Skills". It could be supposed that it is perfectly reasonable and efficient as today educational concepts are built on the formation ideas, first of all on soft skill but without exception hard skills.

WEF experts consider that each above mentioned pillars exercise a significant influence on the country's competitiveness. From the main 12 pillars in the given article, there will be considered pillars connected with education, namely: "… primary education" and "High education" (according to the report of 2017) and "Skills" (according to the report of 2018–2019). From more over 100 indicators of GCR, education and skill are evaluated by 8–5 indicators.

Indeed in 2017:

1. *Quality of primary education*
2. *Primary education enrollment rate*
3. *Secondary education enrollment rate*
4. *Tertiary education enrollment rate*
5. *Quality of the education system*
6. *Quality of math and science education*
7. *Quality of management schools*
8. *Internet access in schools*

In 2018–2019 years:

1. *Mean years of schooling*
2. *Skillset of graduates*
3. *School life expectancy*
4. *Critical thinking in teaching*
5. *Pupil-to-teacher ratio in primary education*

There are many disagreements about quality, education concepts and about its measure-

ments. It can be stated that the main components of education quality identification are the quality of math and science education, quality of management schools and Internet access in schools.

The level of high education has an essential meaning for countries, which want to improve their economy. In particular, economic globalization demands highly educated workers, who are able to adapt to the environmental changes and developed demands of the production system (World Economic Forum, 2006). The orientation to the future of international education is the main ticket to success of the country in the field of human development.

The degree of employee training is also taken into account as a professional and extended work-study education (most countries marginalize), that allows providing with extended staff professional development. Infrastructures for continuing education of engineering, pedagogical staff and heads of educational organizations are being created.

Therefore, development of primary and higher education criteria evaluation was based on key moments, which are necessary for the country's development (WEF, 2006).

Studying international GCR, as it was mentioned above, the analytical report "Global competitiveness of Russian education" was also analyzed and there are presented criteria for identifying real global competitiveness of education on each level while WEF GCR considers only primary and high education (Abankina, 2017).

In the given article it is said that school is a core part of the educational system. In the Russian report the main criteria of school education are:

1) universal access to the education;

2) financing of education;

3) planned educational results;

4) international comparative study of education quality;

5) equality of educational opportunities; work with talents;

6) qualifications of teachers and their work condition.

As in GCR the quality and financing are the dominant criteria for identifying competitiveness of the country in the international level (Abankina, 2017).

The reason for choosing these criteria on the principle that universal access to free education is very important, as today the duration of compulsory education is increasing and this age is varied in different countries. On average the period of compulsory education is 12–13 years. Not knowing the exact number of students, who did not complete their basic education, leads to the problem from the point of enrolment in qualitative formal education. Consequently, the enrolment in general education, length of schooling are more evident indicators for evaluation of its availability. Competitive standards aim at education results. As it was mentioned in the PISA program, today the main goal of school education is not only to give knowledge, bult also to prepare students for life.

When referring to a decent academic background the qualification of students, work conditions and motivation of professional development cannot be ignored. Qualification of teachers and their work condition are main indicators of school system competitiveness. Importance of teachers' development was mentioned while analyzing GCR. The importance of teachers' development lies in training of specialists.

Apart from two reports GCR and "Global competitiveness of Russian education" report for our research we chose criteria of PISA, TIMSS**,** PIRLS.

Today the world undertakes to create a global educational strategy, therefore the realization of international competitive studies, as PISA, TIMSS, PIRLS is substantive (Zhilbaev, 2016).

The aim of PISA is to evaluate whether students have knowledge and skills necessary for unimpaired operation in society (functional literacy) (PISA-2015). The given estimation concentrates on such subjects as science, reading and mathematics and shows how 15 years old students can realize and apply lessons learned as within the walls of schools so out of them. This approach represents the fact that the modern economy rewards people not for what they know, but for what they can do with their knowledge.

Additionally, the influence of different factors on educational achievements of students are being studied. These are socio-economic aspects, characterization of educational organizations and educational opportunities of teenagers beyond school. The PISA project gives the opportunity to compare different educational systems and use the experience of OECD advanced countries in developing national strategies of education. The study is held for a three-year cycle. Priority guidelines are identified in each period. As detailed above, this program checks the knowledge of students according to the three directions: reading literacy, mathematic literacy and science literacy. These directions are aligned with school subjects (MOE RF, 2015). Used "literacy" notion means the ability to practice received knowledge and skills in the main fields of subjects, also to analyze, explain efficiently, engage substantively in setting, solving and explaining objectives in different circumstances and reflect assessable knowledge and skills (Analytical overview, 2011).

PISA studies the influence of different factors on educational achievements of students. The indicators reflecting main aspects of relation between socioeconomic status and achievements, allows the countries to control changes in these relations as time goes and to compare themselves with other systems (Francesco, 2020).

Along with the abilities of students in PISA the attention is paid to school climate, which can have an impact on academic performance of students: school truancy, disciplinal climate, teacher and behavior of students, which hinder learning and teacher support by students (Ricardo L., 2020).

Tasks analysis according to each direction show that all of them connect with life situations. So, for example, reading literacy aims at determining the ability of a person to understand, use, assess texts, think about them and do reading in order to achieve their goals, extend knowledge and opportunities to take part in social life.

The ability to comprehend and interpret continuous text fragments are key skills for full participation in the labor market, also in social and public life in 21-st century. For a successful citizen it is necessary to use information from different fields for efficient search, sorting and filtering of a huge amount of information.

Reading literacy tasks are composed with the aim to check such skills as: 1) finding access to the information, rapid text reading and highlighting the part which contains sought information; 2) general text understanding and translation text information into the language of readers, identifying main and minor information; 3) think on content and form of text and its evaluation. The last helps comprehend, connect text context with life experience and give your own assessment (OECD, 2018).

The aim of mathematic literacy is to evaluate the readiness of students to use mathematics in their everyday life. The given direction includes tasks close to the real problematic situations. Four context categories are used: *personal life, education / profession, social life and scientific work* (OECD, 2018).

The situations of public life and scientific work categories taken from the life of local communities are about the problem appearing in the near environment of students.

The third direction of scientific literacy demonstrates the ability of a person to take a position of active citizenship according to the issues connected with development of experimental sciences and use their achievements, his readiness to be interested in experimental sciences (OECD, 2018).

The tasks are directed to check next competences: 1) to explain phenomena scientifically; 2) understand features of scientific research; 3) scientifically explain data and use evidence to make conclusions. Problem-based situations are about health, natural resources, environment, hazards and risks, relationship of science and technologies. These skills can be considered as a set of actions which each literate person can do (Gold Dayona, 2019).

The aim of international assessment TIMSS is to evaluate mathematic and science literacy level of fourth and eighth grade students. It is held every four years by the international association for the evaluation of educational achievement (IEA) in about 60 countries.

This organization is an independent international association of national research institutes and government agencies doing international research achievements. Their assessment provides not only information about general achievements of students, also about their experience and attitudes toward mathematics and science, but also about education and training of their teachers, characteristics and types of class activities, moreover school conditions for teaching such subjects as mathematics and science. Early academic skills connected with literacy and mathematics and also early nonacademic skills of children, such as social competency and self-management are more important indicators of future academic achievements (H. Harju-Luukkainen, 2020).

TIMSS provides an opportunity to politics in the education field to realize the phenomenon of education in their countries. Data taken from study results are a valuable investigatory resource (N Md Norl, 2020).

Above-mentioned assessments allow to define tendencies in education of participating countries every four year, when fourth grade learners study at eighth grade (Zhilbaev, 2016).

According to TIMSS, in mathematics part the knowledge of facts and methods, using notion, solving regular problems, analysis, hypothesizing, evaluation, evidence and others are assessed. Scientific part assesses factual knowledge, conceptual understanding, analytical skill, generalized competence, planning, learning and other.

Formation of reading skills of fourth grade students are being done with the help of international assessment PIRLS.

If TIMSS, PISA and PIRLS determine the level of student knowledge, TALIS (Teaching and learning international survey) studies the working condition of teachers and educational environment at schools, which is important for achieving a sound academic background.

TALIS is being held from 2008, is the first wide international survey of teachers and headmasters according to the different aspects influencing children's education. (TALIS 2018). It is a major international survey, which studies the work condition of teachers and school educational environment. The number of states taking part in the third cycle reached 48. The goal of TALIS is presenting proven, timely and comparable data for identifying focus in developing educational policy, aimed at arrangement of conditions for effective teaching and learning.

Hence, the analysis of international results of assessments showed that a detailed approach is needed for criteria development. They should reflect the essence of the object of assessment, as well as those characteristics of the assessed object that are most relevant and important for the specific assessment context, the criteria should be adequate and correspond to the goals and objectives. Moreover, each criterion should be measurable in qualitative and quantitative indexes (Syrymbetova, 2019; Novikov, 2007).

Methods

In order to conduct the research data of international assessments as PISA, TIMSS, PIRLS, TALISS, PIAAC and GCR for the last three cycles were analyzed. Moreover, to find out the country with best practice in education correlation analysis as Person and Spearman were used. To be sure in the relevancy of our developed criteria, there was conducted a survey in Google Form among experts to assess them.

Results

Therefore, the review of literature and the analysis of theoretical and empirical materials allow us to make next conclusions:

1) considering the common point of intersection among numerous definitions of "criterion", in the given article the understanding of criterion as the meaning of definite response to a question or solving task, which is used for identifying requirements of what efficiency will be considered "high", which is "low" and which is "neutral" is used (Konstantin 2019).

2) found upon the system of criteria and indicators of education in well-known international assessment reports, criteria which are important for identifying best international practice with further implementation of its elements in the national system of Kazakhstan education are highlighted.

Given this, next criteria are offered:

1. International recognition of experience

1.1 GCR index

1.2 PISA index

1.3 TIMSS index

1.4 PIRLS index

1.5 TALIS index

2. **Invariance of practice**

3. Efficiency of practice

4. Adaptability of practice

The given criteria are explained as follows:

1) **international recognition of experience** is a positive and objective assessment, given by skilled experts based on valid diagnostic tools, and approved by the general public. Such evaluations are GCR index and international assessment studies as PISA, TIMSS, PIRLS, TALIS in the context of national education systems. Moreover, PIAAC index, which presents the literacy level of the population, i.e., it is the percentage of literate, educated people from the general population. This survey is conducted between people from 16 to 65 years old (UNESCO).

2) **invariance of practice** is the ability of a dynamic system to keep moving by its intended trajectory, in spite of perturbations affecting it (Academic.ru). It is totally obvious that this definition is rational, since the synergistic essence of educational systems creates its dynamism. So, in the context of the article invariance in practice as positive dynamics of above-mentioned last three cycle international studies results, i.e., if the dynamic of international studies results shows the progress in indexes for the analyzed period, such practice can be recognized stable;

3) **efficiency of practice** is positive exponent of correlation TIMSS, PISA, PIRLS results with GCR and PIAAC results, the latter show retentivity and invariance of educational outcome, gained by adults in their school years;

4) **adaptability of practice** is a correlated level of created country education value (more exactly values-based attitude to form its main subject) intended to adopt the experience of others.

Discussion

The results of conducted analysis are presented in the given part of the work in order to explain the relevance of chosen criteria of international experience assessment.

Thus, the study and analysis of GCR results for the last three years (2017, 2018, 2019) show that according to the general indexes, such countries as Switzerland, the USA, Singapore, Netherlands, Germany and Hong Kong are in the top five (Table 1) (Klaus 2017, 2018, 2019).

At the same time, according to the education index Finland was leader twice and Switzerland once (in 2019). Presented achievements of Finland are interesting, as this country is not in the top five according to the broad pillars of GCR. The broad pillars and education indexes correlate more in such countries as Singapore, Switzerland, Netherlands, the USA (Table 2).

As it is seen from data in Table 2, the world's leading countries in terms of the GCR index are not stable according to their leading position in education. At the same time, the mean for the three years can demonstrate more successful country according to the general pillars, which is the USA (Fig. 1).

Table 1. GCR indexes (broad pillars)

Country	2017 year	2018 year	2019 year
Switzerland	1–5,86	4–82,6	5–82,3
USA	2–5,85	1–85,6	2–83,7
Singapore	3–5,71	2–83,5	1–84,8
Netherlands	4–5,66	5–82,4	4–82,4
Germany	5–5,65	3–82,8	
Hong Kong			3–83,1

But, if to compare GCR pillars in the field of education, the USA is in the third place, Singapore is in the fifth, Switzerland and Netherlands do not lose their position, Finland, which has not been in top five according to the GCR general pillars: it was in 11th place in 2018 and in 2019 (Fig. 2).

Next questions are arising: "Is the success of the national educational system valid warrant of country competitiveness, on the whole?" or "How are GCR tools of measurements valid?" It seems that the questions are serious enough, that they demand special research. But along with this, it is considered that the changes in indicators GCR according to the education in 2018 with the focus on skills of alumni and critical thinking in education in some degree gives the answers to the above-mentioned questions. Moreover, the general paradigm of education in the modern world creates a tendency on developing "soft" skills. However, searching answers on these questions is not included in the tasks of the given research. Our research focus is somewhat other. How to identify best practice in education and how it is adoptable in the educational system of other countries.

Table 2. GCR indexes (indicator of education)

Country	2017 year	2018 year	2019 year
Finland	1–6,54	1–87,9	2–5,6
Singapore	2–6,52	20–76,0	4–5,4
Switzerland	3–6,42	2–87,3	1–5,9
Netherlands	4–6,39	4–85,4	3–5,5
USA	5–6,22	3–86,3	5–5,3

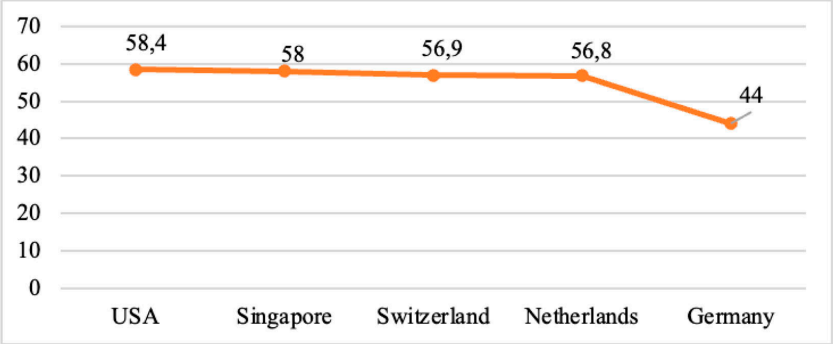


Fig. 1. Mean value of general GCR pillars for the years: 2017, 2018, 2019

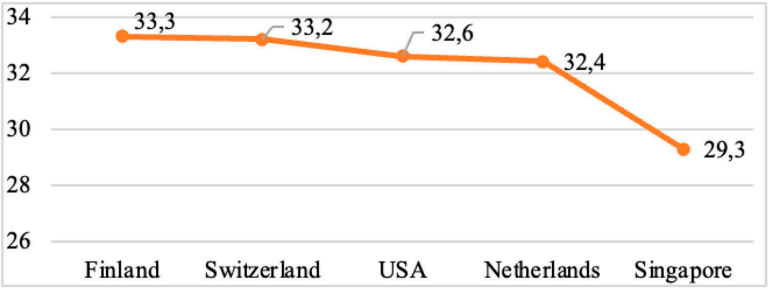


Fig. 2. Mean value of GCR indexes according to the education for the years: 2017, 2018, 2019

If GCR measures its indicators according to the criteria which are reflect, mainly, overall trend (mean years of schooling; school life expectancy; pupil-to-teacher ratio in primary education) and only two questions relate to the education outcome (Skillset of graduates; Critical thinking in teaching), TIMSS, PISA and PIRLS demonstrate detailed indicators to measure the level of students' knowledge (Kultumanova 2013).

Relying on statistics, the number of participating countries is increasing. So, for example, 32 countries (28 OECD countries) participated in 2000, in 2003–41 countries (30 OECD countries), in 2006–57 countries (27 OECD countries) and in 2009–75 countries (34 OECD countries), in 2012–65 countries (34 OECD countries), in 2015 the number of countries was 70 and in 2018 the number increased to 79. Increasing the number of participated countries in the given study shows its popularity and importance.

The results of study for the 2012, 2015 and 2018 (Table 3) are presented (A. Schleicher, 2019, A. Kultumanova, A., 2013, PISA-2015).

From numbers presented in the Table 3 according to the indexes of PISA reading literacy Singapore is in the top five (Fig. 3), China is leader in terms of mathematic literacy (Fig. 4), and according to the scientific literacy indexes China is also leader (Fig. 5).

It should be particularly noted that in the top five leading countries, in terms of formation reading, mathematics and science literacy of 15-year-old students according to the PISA monitoring, was only Singapore which was among the top five of GCR.

Regarding TIMSS study. The number of countries, taken part for the last three studies are varied as follows:

- 36 countries participated (for fourth grade students) and 49 countries (for eighth grade students) in 2007;
- the number of countries increased and comprised 50 (for fourth grade students) and 42 countries (for eighth grade students) in 2011;
- in 2015 it decreased to 49 (for fourth grade students) and 39 countries (for eighth grade students) (International study center, 2007).

Based upon the number of participating countries in international studies, in comparison with PISA, as it happens, TIMSS is less popular. However, the results of TIMSS studies

Table 3. PISA results for the years: 2012, 2015, 2018

Country	2012			2015			2018		
	R.l.	M.l	S.l	R.l.	M.l	S.l	R.l.	M.l	S.l
Singapore	542	573	551	535	564	556	549	569	551
Japan	538	536	547	516	532	538	504	527	529
Hong Kong	545	561	555	527	548	523	524	551	517
China	570	613	580	494	531	518	555	591	590
The Republic of Korea	536	554	538	517	524	516			

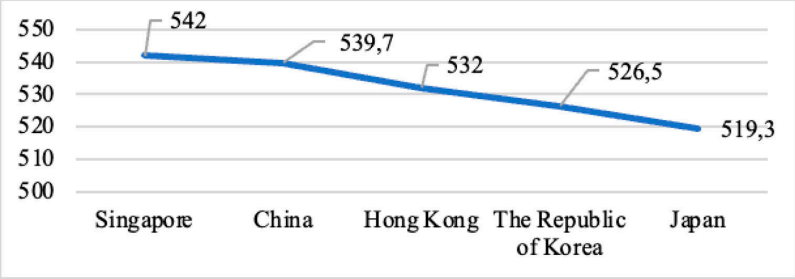


Fig. 3. Mean value of PISA for the years: 2012, 2015, 2018 (reading literacy)

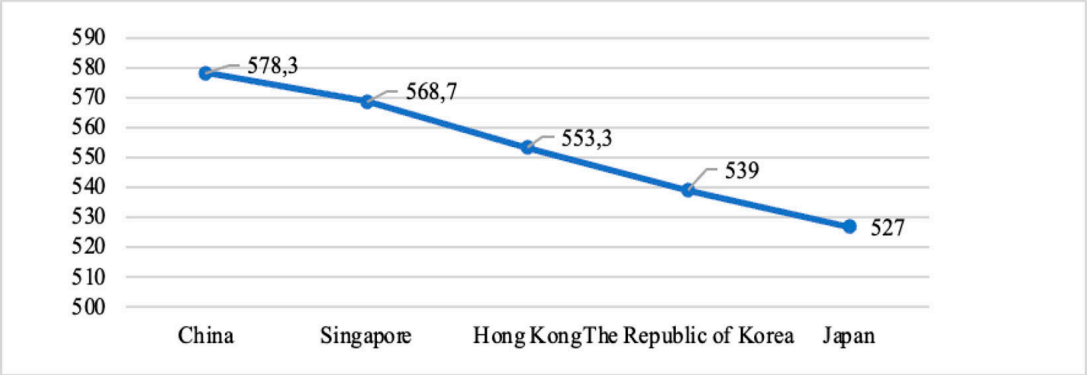


Fig. 4. Mean value of PISA for the years: 2012, 2015, 2018 (mathematic literacy)

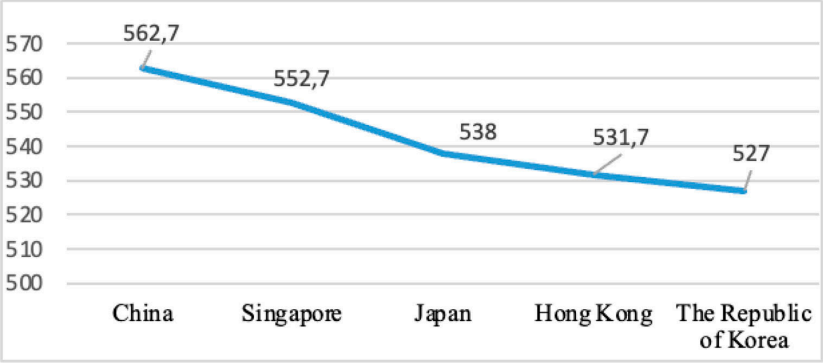


Fig. 5. Mean value of PISA for the years: 2012, 2015, 2018 (science literacy)

are not less significant in evaluating the national education system, as they demonstrate two types of literacy (mathematics and science) of schoolchildren according to the two-age grade (4-th graders and 8-th graders). The results of three studies of TIMSS are presented below (Table 4) (IEA, 2008, IEA, 2015, IEA, 2012).

As in PISA study from the top five of GCR Singapore is in the top five countries according to the TIMSS study. At the same time this country is absolutely the leader in mathematics and science literacy of students (Fig. 6, 7 and 8).

These TIMSS results correlate with PISA results.

PIRLS identifies the reading quality of fourth grade students. The given study is also conducted by International Association for the Evaluation of Educational Achievement once in five years since 2001. As in TIMSS the number of countries taken part in PIRLS increased significantly, i.e., 45 countries took part in 2006, 45 countries in 2011 and 50 countries in 2016. Analysis of three PIRLS studies demonstrates the following: Singapore and Hong-Kong were stable in top five as in PISA and TIMSS study, and also new countries as Russia, Finland and Canada are appearing. At the same time Russia is a leader according to the reading literacy of primary school students, but Hong-Kong, Singapore and Finland are in the same position (Fig. 9) (IEA, 2007, IEA, 2012, IEA, 2016).

Therefore, according to our suggested criterion "**International recognition of experience**" we analyzed the GCR results according to the general pillars and education indexes separately, and also three international studies (PISA, TIMSS, PIRLS), which assess exactly the educational level of students. Degree of correlation among GCR and

Table 4. TIMSS results for 2007, 2011 and 2015 years.

Country	2007				2011				2015			
	maths	sci-ence	maths	sci-ence	maths	sci-ence	maths	sci-ence	maths	sci-ence	maths	sci-ence
	4-th grade	4-th grade	8-th grade	8-th grade	4-th grade	4-th grade	8-th grade	8-th grade	4-th grade	4-th grade	8-th grade	8-th grade
Singapore	599	587	593	567	606	583	611	590	618	590	621	597
Japan	568	548	570	554	585	559	570	558	593	569	586	571
Hong – Kong	607	554	572	530	602	535	586	535	615	557	594	546
Republic of Korea			597	553	605	587	613	560	615	589	606	556
China	576	557	598	561	591	552	609	564	597	555	599	569

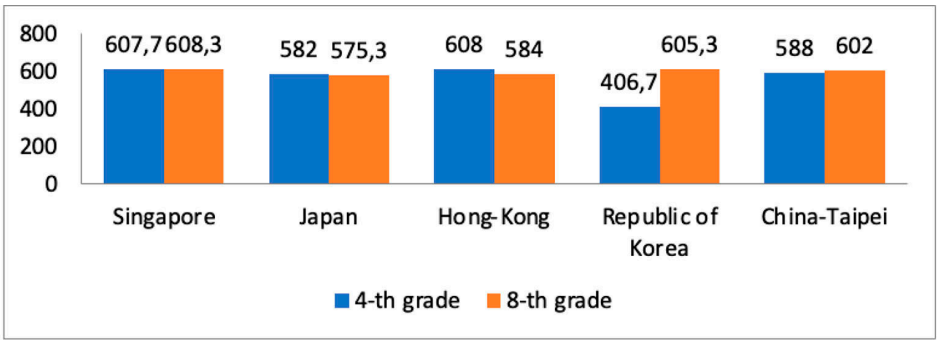


Fig. 6. Mean value of mathematic literacy according to TIMSS for the years: 2007, 2011, 2015 (in the context 4-th and 8-th grade)

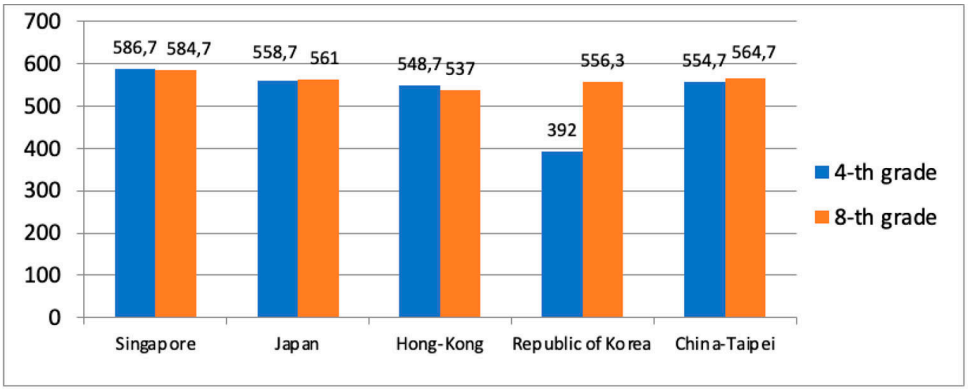


Fig. 7. Mean value of science literacy according to TIMSS for the years: 2007, 2011, 2015 (in the context 4-th and 8-th grade)

PISA, TIMSS, PIRLS results can be named complex and in particular cases contradictory on this stage of the study. Also, there is one more study concerning education issues. It is referred to international study according to the education and teaching issues TALIS, which is held once in five years via survey of teachers and principals. The results of TALIS according to the next aspects are analyzed: education, work condition and professional

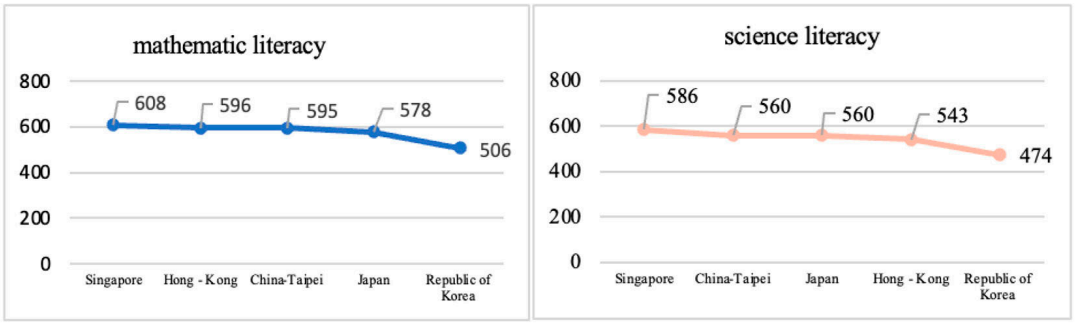


Fig. 8. Mean value of TIMSS for the years:
2007, 2011, 2015 (mathematics and science literacy)

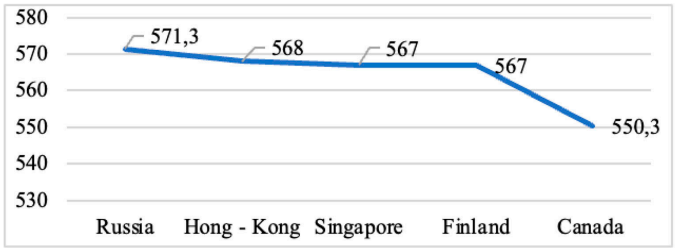


Fig. 9. Mean value of PIRLS indexes for the years:
2006, 2011, 2016

development for the last two cycles, i.e.: the second cycle of study was held in 2013 with the participation of 37 countries and the third cycle with participation of 46 countries was in 2018 (OECD, 2014, TALIS 2018).

It should be noted that it is paid a special attention to the position of Singapore as the country, which is in the top five according to all analyzed international studies.

The first indicator, which connects with the proportion of teachers having high education implies, that the number of master degree teachers is more than teachers with bachelor degrees in the TOP – 5 countries. However, there is a wide range in the top five countries, only two countries Croatia and Slovakia twice appear in TOP – 5, and we are interested in the country Singapore is on the second and third ten (Table 5).

Initial conclusion in the stage of study can be done as follows: the tensions between indexes of studied education results of students and the teacher's qualification level should be accepted as so the best results of Singapore and Finland students are not correlated with qualification indicators of their teachers.

At the first glance recognizing the qualification of teachers as a main determinant of student's success, we also admit that bachelor and master degrees should be always acknowledged in conditions of high development dynamics as a community, so the education system as its social substructure. Hence the indicators of professional developments of teachers were analyzed. TALIS provides indicators such as: professional development of teachers (seminars, master-classes also upgrade training courses), which are directed to gain new teaching methods. In this respect Singapore is in TOP – 5 countries according to the both studied cycles of TALIS (however, in 2018 it falls from the first place to fifth place in 2013), moreover Australia, which was not noticed in above mentioned international studies was twice in the top five. Besides, it should be noted there is a wide geographical range of TOP – 5 countries according to the TALIS indicator (Table 6).

Table 5. Percentage of teachers who have completed formal education (%)

2013 year				2018 year			
The percentage of teachers with bachelor degree		The percentage of teachers with master degree		The percentage of teachers with bachelor degree		The percentage of teachers with master degree	
Belgium	85,4	Australia	98,9	Saudi Arabia	92,8	Slovakia	96,2
Chile	17,9	Poland	98,8	Turkey	92,3	Portugal	93,4
Croatia	17,7	USA	98	Brazil	89,8	Croatia	91
Italy	15,8	Norway	97,9	Kazakhstan	89,4	Finland	90,6
Serbia	15,5	Slovakia	97,5	China	86,4	Czech Republic	89,7
Singapore (10-th place)	5,5	Singapore (18-th place)	92,4	Singapore (16-th place)	72	Singapore (32-nd place)	22,4

Table 6. Percentage of teachers who participate at least in one professional development activity (%)

2013 year		2018 year	
Singapore	98	Lithuania	99,4
Canada	97,7	Shanghai	99,3
Croatia	96,8	Australia	99,3
Australia	96,6	Austria	98,7
Malaysia	96,6	Singapore	98,5

Table 7. Average number of working hours (i.e., 60-minute hours) that teachers spent on tasks related to their job during a typical calendar week

2013		2018	
Chile	29,2	Georgia	25,3
Italy	29,4	Saudi Arabia	28,7
Israel	30,7	Buenos Aires	29
Finland	31,6	Brazil	29,8
Mexico	33,6	Italy	30
Singapore	47	Singapore	45,7

In case with Singapore here there is regularity about the strategic relevance of permanent professional development of teachers. Besides, it is considered that the success of students in Singapore and Finland can be due to the time spent by teachers to perform professional functions. This is one more indicator of TALIS. Hence, according to the given study, Singapore teachers spend more than 40 hours per week for professional purposes, also teachers of Finland need much time (Table 7).

Meanwhile, it is hard to confirm that there is correlation between time spent by teachers for professional purposes and the success in students' education achievements, whereas teachers can be involved at events which are not relevant for their profession (it concerns post-Soviet countries).

In general, studying the TALIS indicator, we point out a gradual decline in the number of working hours (i.e., 60-minute hours) that teachers spent on tasks related to their job during a typical calendar week. Given this, it means that there is a tendency for a decreasing professional timesheet for teacher, which will reduce such factors as professional burnout.

One more important issue that teachers worry about is the maximum number of students per class. There is an opinion that a smaller number of students in class is better for the achievements of students. However, it is a disputable statement. The TALIS indexes according to the indicator "Class size", where at first Singapore shows successful educational achievement of students in spite of high maximum number per class, the second Finland also demonstrates high results of students, but low in class size (Table 8).

Chosen TALIS indicators are significant for quality education. The professional qualification level of teachers plays an important role in teaching, and may indirectly, but influence on academic progress of students. Therefore, based on the analysis of studies, Singapore and Hong-Kong show high results according to all subjects in spite of that the percentage of teachers having bachelor degree is 5,5 % (2013) and 72 % (2018), while countries where percentage of teachers with bachelor degree is more than 90 % students show low scores in international assessment studies; or the relation of teachers with master's degree was 98,9 % in Australia in 2013, 96,2 % in Slovakia in 2018, but in spite of this according to the results of students in assessment studies these countries are not in top five countries with high results (Douglas 2011).

Conducted analysis confirmed us that for education assessment multiple classification are needed, when the same determination can give different results depending on socioeconomic reality of every country among which, from our point of view, the value system of any cultural community including values-based attitude toward education is dominated.

At this point it is considered that GCR and international assessment studies indexes, giving much information for thinking and discussion demonstrate a real overview of national education system success. The international recognition can be claimed to the status of one of best practice assessment criteria, in our case it is practice in education.

Next criterion is **"Invariance of practice"** (definitely, all introduced criteria should be understood with extrapolation on the education system). To identify the given criteria, analysis of countries' dynamics according to the GCR, PISA, TIMSS, PIRLS and TALIS indicators were conducted Moreover, the dynamics of the results were followed according to the countries, which were in TOP – 5. Summarizing the results, it can be seen that the results of the countries are varying from year to year.

Having analyzed the data of GCR according to the education for the last three years 2017, 2018, 2019, it can be seen that Netherlands demonstrates upward trend (3-rd place → 4-th place → 4-th place) and Switzerland (3-rd place → 2-nd place → 1-st place). In the third GCR study (2019) Finland lost leading positions, which it kept in the first (2017) and second (2018) studies. Singapore also showed high results in GCR education (skills) in the

Table 8. Class size (Number of students enrolled in a teacher's target class)

2013 year		2018 year	
Estonia	17,3	Georgia	16,7
Belgium	17,3	Estonia	17,0
Latvia	17,7	Belgium	18,0
Finland	17,8	Finland	18,1
Slovakia	19,1	Kazakhstan	18,1
Singapore	35,5	Singapore	32,8

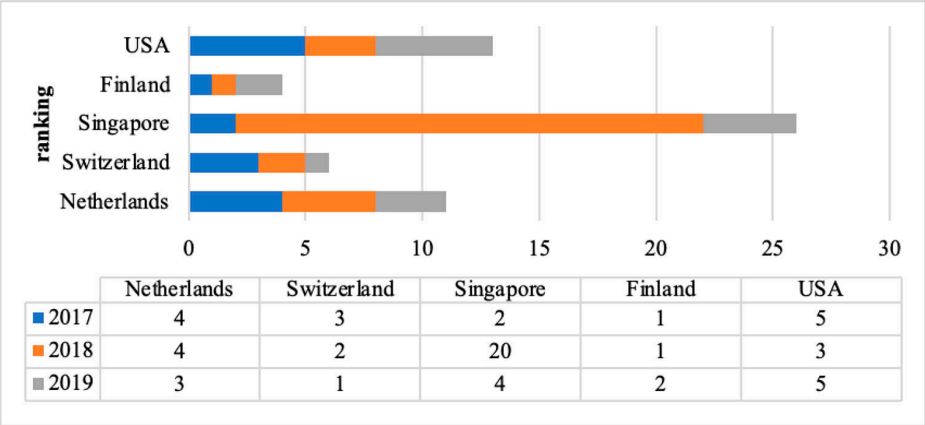
first (2017) and the third (2019) studies of GCR, however in 2018 it fell till 20-th place and was able to improve their indicators for 16 positions (Fig. 10).

Drawing on GCR education results Finland demonstrates stable indicators, and according to the general results the situation is stable in Singapore.

According to the PISA international assessment study, which is held since 2018, from the 65 taken part countries China was a leader, which fell from first place till tenth in the analyzed period and in 2018 it took first place again. Singapore and Hong-Kong showed stable results: according to the results of the last three PISA studies the indicators of this country changed insignificant (Fig. 11).

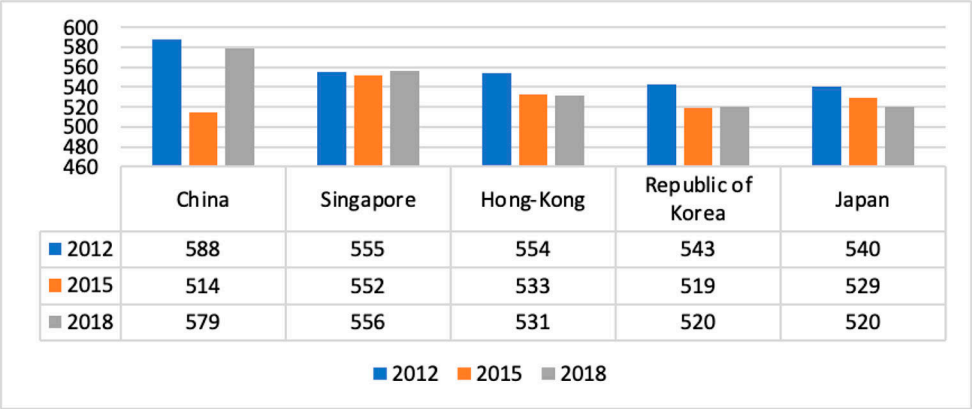
According to the general results of TIMSS assessment Singapore, Japan, Hong-Kong, Republic of Korea, China-Taipei were in the top five in different years for the last three years. The data analysis according to the mathematics and science among fourth-eighth grades witnesses that the countries of Eastern Asian showed high results, the leader among which is Singapore is in first place with stable increase by every measure. Republic of Korea and China-Taipei are in second and third places steadily. It should be noted that all TOP-5 countries demonstrate the progress of their indexes according to the all TIMSS indexes (Fig. 12).

If the mathematics and science literacy of fourth grade students are assessed in TIMSS, PIRLS study, as it was said above, allows com-



	Netherlands	Switzerland	Singapore	Finland	USA
2017	4	3	2	1	5
2018	4	2	20	1	3
2019	3	1	4	2	5

Fig. 10. Dynamics of GCR results (indicators according to the education)



	China	Singapore	Hong-Kong	Republic of Korea	Japan
2012	588	555	554	543	540
2015	514	552	533	519	529
2018	579	556	531	520	520

Fig. 11. The trend data of TOP-5 countries according to the PISA results

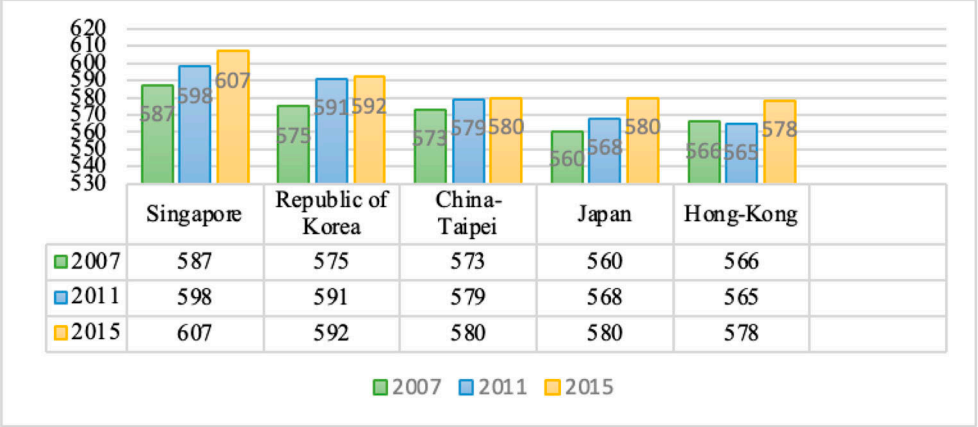


Fig. 12. The trend data of TOP-5 countries according to the TIMSS results

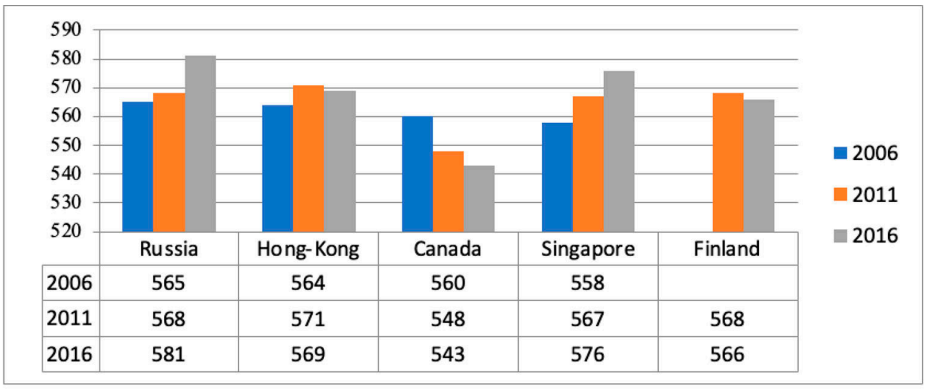


Fig. 13. The trend data of TOP-5 countries according to the PIRLS results

paring level and reading quality and text understanding of fourth grade students. According to PIRLS Russia, Hong-Kong, Canada, Singapore, Finland, Ireland, North Ireland were in the TOP-5 countries in different years. Thus, an upward trend is seen in such countries as Russia and Singapore, but Hong-Kong has varying indexes: the increase between first and second and third studies. However, in comparison with the first study (2006) the indexes of two following studies show perceptible gain (Fig. 13).

In terms of conducted analysis according to the international assessment studies TIMSS, PISA, PIRLS and studying global competitive reports for the last three studies, the next conclusion can be done. Singapore, having demonstrated best results with an upward trend has taken the first and the second places according to the test results, where mathematic, reading and science knowledge were assessed. Singapore was also different with high results according to GCR. Along with Singapore, the USA and Switzerland showed stable results. However, the experience of Singapore in the context of its stability attracts special attention.

Next our suggested criterion is called "**Efficiency of practice**". For counting it Pearson linear correlation formula was used in order to identify the strength of relationship between PISA (2012,2018), TIMSS (2011, 2015), PIRLS (2011, 2016) and results of TALIS for 2013 and 2018 years, as the level of teacher qualification and teaching condition are one of the main determinants of academic achievements of students. Earlier in our work there was presented the description of these results, namely: per-

centage of teachers who have completed formal education (%); percentage of teachers who participate at least in one professional development activity (%); class size; Average number of working hours (i.e., 60-minute hours) that teachers spent on tasks related to their job during a typical calendar week. The results of the last two studies were taken for the correlation analysis.

As it is known, correlation analysis is correlated change of indexes which is characterized with directions, forms and strength. Correlation coefficient is the degree of measurement of variable ratios (Senthilnathan S., 2019, Mohamed Ahmed Zaid, 2015). Correlation analysis is a statistical technique which deals with correlation between two variables.

In our research for correlation, we used Pearson correlation coefficient formula.

Pearson (1) (Senthilnathan S., 2019).

$$r_{xy} = \sqrt{\frac{\sum(x_i - \acute{x}) \times \sum(y_i - \acute{y})}{\sum(x_i - \acute{x})^2 \times \sum(y_i - \acute{y})^2}} \qquad (1)$$

There is not a correlation between two indexes if summarizing results the given index is near or –1, if the index is equal or near +1, it shows the strength between two indexes.

In output computation the next coefficient value of Pearson linear correlation is produced (Table 9).

The interpretation of findings leads to the next conclusion:

1) graduated education of teachers and development of their professional qualifications have significant influence on students' academic achievements;

2) there is not any correlation between the size and class content, also span time of teachers for their doing professional tasks with the success of their students.

If the first conclusion is beyond dispute, moreover it represents a scientifically determined pedagogical pattern, the debate about the second conclusion, according to us, has not got a definite argument. The experience of Singapore is acknowledgement of it: in maximum number of schoolchildren in class they demonstrate high educational results. It is true, long experience of teachers (including the authors of the article) even if at an empirical level, but shows the validity of the statement that implication of effective pedagogical technologies orientated on individuality and independence of students are more important than their number of students in class or in group. It is the first. The second one is the motivation of students in education: a warranty of their academic success is one who wants to study and strives for a big autonomy in education.

It was decided to complete one more correlation line between the results of TIMSS, PISA, PIRLS and PIAAC results. The subject of PIAAC study is competency assessment of 16–65 years old adults. At first in 1950 UNESCO identified "literacy" as the ability to read, write and speak about everyday life using visual and written materials. However, till 1990 literacy was acknowledged as a skill contributing to individual success (OECD, 2019).

The reason of our reference to the given study is to identify the efficiency of the national educational system experience hypothetically and with this aim to set correlation between learning outcomes of students and their competence in adulthood.

For this purpose, the indexes of Singapore are chosen, as schoolchildren of this country at

Table 9. The results of Pearson correlation analysis

TALIS	TIMSS	PISA	PIRLS
Percentage of teachers who have completed formal education	1	1	1
Percentage of teachers who participate at least in one professional development activity.	1	1	1
Class size	-1	-1	-1
Average number of working hours (i.e., 60-minute hours) that teachers spent on tasks related to their job during a typical calendar week	-1	-1	-1

the age of 10–15 demonstrated the best results according to the international studies, which check the level of mathematic, reading and science literacy.

At the beginning PIAAC results were analyzed according to two criteria: reading literacy and mathematic literacy for 2016 and 2019 years. The choice of PIAAC study connects with that particularly in this period students who took part in TIMSS, PISA, PIRLS at the age of 10 and 14, confirmed the level of their competence being adult (Table 10).

According to the results presented in table 10, Japan and Finland are in the list of the countries where adult nations showed high results. However, Singapore, the country which ranks high in international competitive studies of schoolchildren academic achievements, according to the results of adult literacy takes 24th and 26th place with the score of 257,6 in reading literacy and 257,4 in mathematic literacy.

For this research the Spearman correlation was used for identifying the correlation of TIMSS, PISA, PIRLS results with PIAAC results. Rank correlation coefficient is quantitative estimation of statistical study between phenomenon, using in nonparametric methods (OECD 2019). Next formula is used for Spearman correlation (Sedgwick Ph., 2014).

$$\rho = 1 - 6\frac{\sum d^2}{n^3 - n} \quad (2)$$

The results of international assessment for the last two studies were taken, namely: TIMSS (2007–2011), PISA (2012–2015), PIRLS (2006–2011) and PIAAC (2016–2019), i.e., students, who are at the age of 10–15 took part in these studies in 2016 and 2019 achieved the age of participation in PIAAC (Table 11).

As it is seen there is no correlation between the international studied results of schoolchildren and adults' competencies, as so Spearman coefficient value in all cases is zero: 1) p=0 (TIMSS-PIAAC); p=0 (PISA-PIAAC); p=0 (PIRLS-PIAAC). In other words, our hypothesis about correlation between competencies of different age groups (children and adults) is not confirmed, at least in the example of Singapore.

From our point of view, it connects with high dynamism of transformational and innovational process in the modern world, when young generation forming their own way of thinking and way of life create new sub generational culture. One example is enough: digitalization of all human living environments, or the impact of fourth industrial revolution on professional competencies, which are connected with solving difficult problems today, dependent on profession variation and skill in different occupations, communication skills. That is why, the ability of workers to the constant adaptation and acquiring new skills are demand special attention. Working principle is also changing today, it is becoming free and

Table 10. The literacy level of adults according to the PIAAC results

Country	Reading literacy		Mathematic literacy	
	2016 year	2019 year	2016 year	2019 year
Japan	296,2	296,2	288,2	288,2
Finland	287,5	287,5	282,2	282,2
Singapore	257,6 (on the 26-thplace)	257,6 (on the 26-thplace)	257,4 (on the 24-thplace)	257,4 (on the 24-thplace)

Table 11. TIMSS-PIAAC correlation

№	TIMSS	PIAAC	PISA	PIAAC	PIRLS	PIAAC
1	587	516	555	516	558	516
2	598	516	552	516	567	516
	p= 0		p= 0		p= 0	

mobile, perfect combination of freedom, lack of stress and high satisfaction from the work are forming. It is one of the main lessons of the pandemic. Social isolation and virtual reality begin to form another identity: if in the past people more identified themselves according to the particular place, ethnic group and even language, today identity becomes more widespread. Digital world expands human opportunity, made any place accessible in spite of destination and time.

Returning to the results of correlation, at this stage of research we doubted in relevance of our suggested criterion of assessing best practice in education (we remember, it is talked about "Efficiency of practice"). Therefore, it was decided to continue finding out the level of correlation of education with competitiveness of the national economy and correlated results of GCR with PISA, TIMSS, PIRLS results.

The correlation was completed on the basis of such countries as Singapore, the USA and Hong-Kong, as Singapore and the USA are in TOP-5 according to GCR index and Singapore and Hong-Kong are in top five according to the PISA, TIMSS, PIRLS results. Pearson correlation was used for the given correlation. The result of correlation is presented in Table 12.

From nine receiving coefficients of linear correlation in six cases close correlation is observed between measured variables. Consequently, our suggested criterion "Efficiency of practice" is relevant. However, considering lack of connection between results of different generation people competences (correlation PISA, TIMSS, PIRLS with PIAAC) there was decided to make correction in interpretation of term "Efficiency of practice" as follows: the criterion "Efficiency of practice" (applicable for education system) means not residual and invariance of academic achievements of adults, taken in school years, as much as factor of success. And if we consider that school education is a large economic unit of the state, hence the condition of its competitiveness so the argument about relevance of our criterion gains additional arguments.

The criterion **"Adaptability of practice"** seems to be the most significant and difficult. The reason for identifying and studying the best practice in education is its implementation in another social environment. Hence, the statement is about importance not just transfer experience from one situation to another or uncritical adoption, but the necessity to adapt it with possible transformation sounds axiomatic. Under the notion of adaptability of practice, we understand the related level of education values (more exactly values-based attitude to forming its main subjects) of a country, which intends to adopt the experience of others. Having accepted arch-complexity of measurement practice according to this criterion, on the range of this article we limit with above mentioned definitions. We consider that this criterion demands separate and targeted study. Within the framework of this article, the results of independent expert assessment of suggested best international experience in education criteria are given. For getting expert commentary a survey was developed and addressed to researchers with requests to estimate the consistency and relevancy of our suggested criteria rate on a scale of one to three (1 is low, 2 is middle, 3 is high).

Table 12. Pearson product-moment correlation coefficient: PISA, TIMSS, PIRLS and GCR

	Singapore						Hong-Kong						USA					
	PISA	GCR	TIMSS	GCR	PIRLS	GCR	PISA	GCR	TIMSS	GCR	PIRLS	GCR	PISA	GCR	TIMSS	GCR	PIRLS	GCR
1	555	81,5	587	81,5	558	81,5	554	79	556	79	564	79	492	83,5	524	83,5	540	83,5
2	552	83,5	598	83,5	567	83,5	533	82,3	565	82,3	571	82,3	487	85,6	525	85,6	556	85,6
3	556	84,8	607	84,8	576	84,8	531	83,1	578	83,1	569	83,1	495	83,7	533	83,7	549	83,7
	r= 0,120		r= 0,999		r= 0,992		r= –0,994		r= 0,903		r= 0,893		r= –0,893		r= –0,329		r= 0,873	

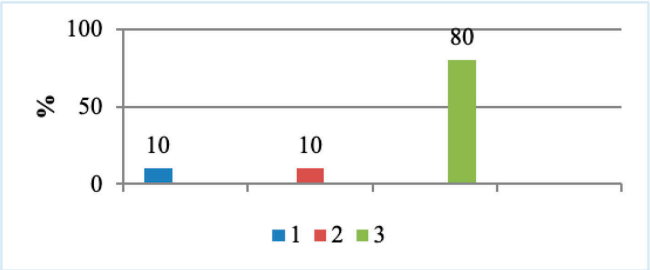


Fig. 14. Expert estimation of criterion 1.1"GCR index"
(including evaluation of education for the last three studies)

The given survey was conducted via Google Forms, 17 experts from Kazakhstan and Russia took part. The survey results are presented below.

Relevancy validation of criterion 1. "International recognition of experience (TIMSS, PISA, PIRLS)" is as follows:

- criterion 1.1 "GCR index" vast majority of respondents (80 % + 10 %) express confidence to the results of the given study (Fig. 14);
- criterion 1.2 "TIMSS index" overwhelming majority of respondents (70 % + 20 %) express confidence to the results of the given study (Fig. 15);
- criterion 1.3 "PISA index" absolute majority (80 %+20 %) of experts gave positive assessment (Fig. 16);
- criterion 1.4 "PIRLS index" 10 % of respondents told their uncertainty, but overwhelming majority (60 %+30 %) agreed with its relevance (Fig. 17);
- criterion 1.5 "TALIS index" absolute majority (60 %+40 %) of respondents also consider the given criterion is acceptable, but with the comment that only students' academic achievements are needed for identifying countries with best practice in education (Fig. 18).

Overall criterion 1. International recognition of experience in its relevance inspires confidence of respondents who expressed their authoritative opinion.

There is not disagreement among opinions of respondents according to the relevancy of criterion 2. **Efficiency of practice** and **3. Adaptability of practice:** here vast majority (80 %+20 %) endorse our idea (Fig. 19 and 20).

General results of evaluation all suggested criteria of assessment best international experience in education looks as follows: in average 96 % of experts endorse our idea expressing positive opinion.

Conclusion

In conclusion, within the framework of the study, it was found that all the criteria proposed for assessing the best international experience practices in education are fully measurable and may serve as a starting point for

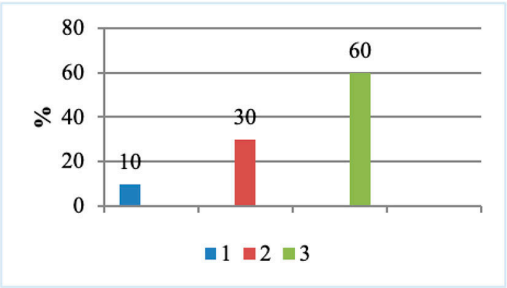


Fig. 15. Expert estimation
of criterion 1.2 "TIMSS index"

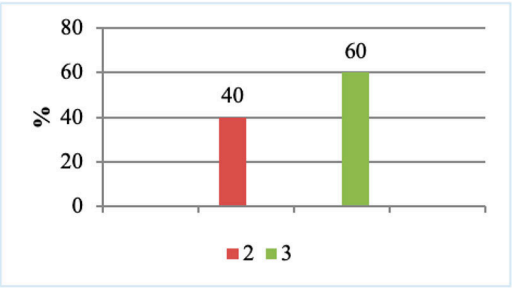


Fig. 16. Expert estimation
of criterion 1.3 "PISA index"

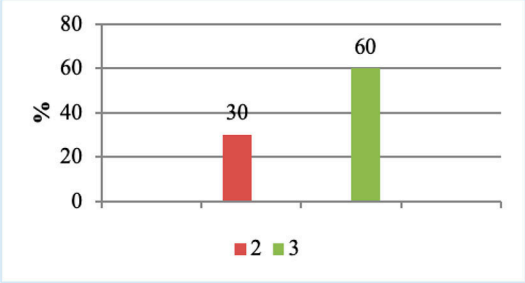


Fig. 17. Expert estimation of criterion 1.4 "PIRLS index"

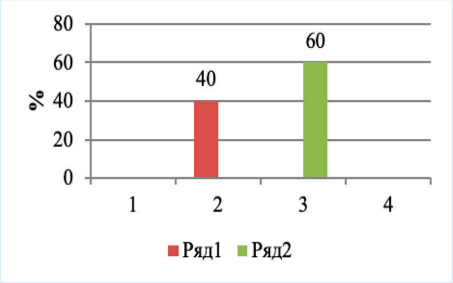


Fig. 18. Expert estimation of criterion 1.5 "TALIS index"

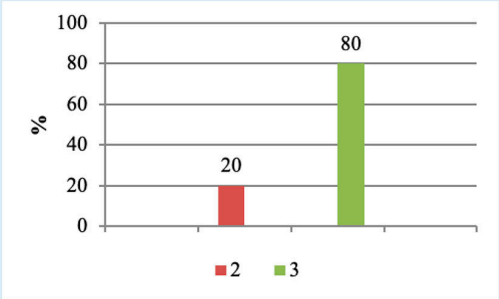


Fig. 19. Expert estimation of criterion 2 "Efficiency of practice"

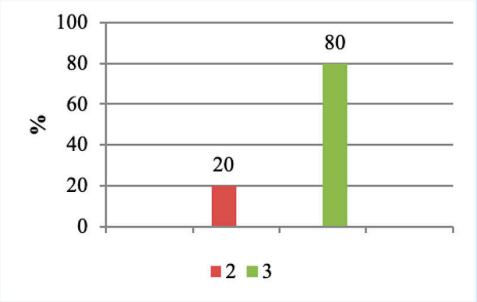


Fig. 20. Expert estimation of criterion 3 "Adaptability of practice"

choosing the experience of one country and its application into another national education system. The most complicated criterion in the evaluating such experience is the adaptability to other conditions. Therefore, the most important conclusion is that one's experience cannot be entirely and completely applied by others. Thus, the elements of a particular national educational system relevant in terms of its significance for solving strategic tasks in the field of educational policy of a particular state are of the greatest interest for further research.

Nowadays the global challenges determine the general trends in the development of the world education practice considerably, in particular, such as inclusion, multilingual education, soft skills development, education digitalization, and etc. At the same time, each country and a single cultural community actualizes its requests, needs, values, which are often aimed at maintaining the continuity of their own, original traditions when introducing innovative processes in education.

In addition, the criteria proposed in the article might help to identify certain successful aspects of educational practice not only in the world leading countries.

In this regard, the development of criteria for the best international experience practices in education is one of the strategies for its applying. The strategy proposed should not be understood as the only one and the most comprehensive one. However, it is quite applicable to study the best experience in the publication of textbooks, in the teaching technology development, in the creation of optimal conditions for improving the qualifications of teachers, etc. In this aspect, this study seems to be promising.

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Model of Digital Competence of University Library Staff

Olga I. Babina*, Elena V. Ermolovich and Natalya V. Bekuzarova
Siberian Federal University
Krasnoyarsk, Russian Federation

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Abstract. The paper examines the views of scientists on the essence, structure and ways of developing the digital competence of university library staff. The influence of this process on the development of the university library is emphasized. The methodological and theoretical basis of this study was composed of leading theories and scientific schools according to a competent approach, set forth in the works of domestic and foreign scientists.
The structure of digital competence of university library staff is defined, including the following components: cognitive, functional-activity, motivational-value and communicative. Profiles of digital competencies of employees of the Scientific Library of the Siberian Federal University are proposed depending on the structure of digital competence and the selected categories of library employees: 1) cataloguers, 2) bibliographers, 3) managers, 4) employees of service departments.

Keywords: competence, competencies, digitalization, digital competence, digital competencies of library staff, profile of digital competencies, university library.

Research area: pedagogy.

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* Corresponding author E-mail address: babina62@yandex.ru

Модель цифровой компетентности сотрудников университетской библиотеки

О.И. Бабина, Е.В. Ермолович, Н.В. Бекузарова
Сибирский федеральный университет
Российская Федерация, Красноярск

Аннотация. В статье рассматриваются взгляды ученых на сущность, структуру и способы развития цифровой компетентности сотрудников университетской библиотеки. Акцентируется влияние этого процесса на развитие вузовской библиотеки. Методологическую и теоретическую основу данного исследования составили ведущие теории и научные школы по компетентностному подходу, изложенные в трудах отечественных и зарубежных ученых.
Определена структура цифровой компетентности сотрудников университетской библиотеки, включающая в себя следующие компоненты: когнитивный, функционально-деятельностный, мотивационно-ценностный и коммуникативный. Предложены профили цифровых компетенций сотрудников Научной библиотеки Сибирского федерального университета в зависимости от структуры цифровой компетентности и выделенных категорий сотрудников библиотеки: 1) каталогизаторы, 2) библиографы, 3) менеджеры, 4) сотрудники отделов обслуживания.

Ключевые слова: компетентность, компетенции, цифровизация, цифровая компетентность, цифровые компетенции сотрудников библиотеки, профиль цифровых компетенций, вузовская библиотека.

Научная специальность: 5.8.1 – общая педагогика, история педагогики и образования.

Introduction

The library is one of the social and cultural institutions that have been demanded by society for many centuries, but today the content of the work of libraries under the influence of informatization is undergoing serious transformations. The competent approach led to a new view on the study and improvement of the professional development of the library specialist. The issues of determining the competence of a library employee are relevant throughout the world, which confirms the creation in 2016 of a working group on the formation of a system of strong library and information education of the International Federation of Library Associations and Institutions with the aim of developing an international quality assurance system that will define and promote educational standards in the field of library and information science.

In the Russian professional community over the past decade, the problems of determining the composition, content and formation of the competencies of library specialists have also been actively discussed. At a new level, discussions on this topic continued after the appearance of a draft professional standard for a specialist in library and information activities in 2014, which has not yet been approved, and disputes around which do not subside in the professional world.

Currently, a lot of attention is paid to the issues of changing and developing the digital competencies of university library employees by Russian and foreign scientists. Among Russian scientists, papers by G.A. Altukhova (Altukhova G.A., 2017), Baitemirova M.D. (Baitemirova M.D., 2015), Baryshev R.A. (Baryshev R.A., 2021; Baryshev R.A. et al., 2020), Elepov B.S. et

al. (Elepov B.S., Kryuchkova E.M., 2009), Carrera K. Diego (Carrera K. Diego, 2015), Kolkova A.A. et al. (Kolkova A.A., Seraya N.N., Dubko V.V., 2019), Kuznetsova T. Ya. (Kuznetsova T. Ya., 2008), Lee M.G. (Lee M.G., 2012), Makeeva O.V. (Makeeva O.V., 2019, Makeeva O.V., 2020), 2020), Mamontova M.S. (Mamontova M.S., 2012; Mamontova M.S., 2019), Sysoeva L.A. (Sysoeva L.A., 2019), Smolyaninova, O.G. (Smolyaninova, O.G. et al., 2021; Smolyaninova, O.G. et al., 2019; Smolyaninova, O.G. et al., 2019) et al. occupy a prominent place. Among foreign scientists, this problem was investigated by scientists such as Baker J. et al. (2016), Chalkiadaki A. (2018). Cox A.M. et al. (2019), Ducas A. et al. (2020), Raza Z. et al. (2019), Shen Y. (2019) et al.

Analysis of scientific research makes it possible to distinguish approaches to the competent description of library and information activities: competence as a universal characteristic of the personality of a library specialist and competence as individual qualities manifested in the performance of his professional duties. The competence of the librarian means the requirements for the personal qualities of library employees. In this sense, the concept of "competence" is used in assessing the knowledge and experience necessary for the effective professional activities of library employees. The main competencies of the modern librarian include gnostic (knowledge) competencies.

The formation of the digital competencies of the modern librarian is due not only to the development of new content of the educational system, but also to methodological, technological and didactic innovations, which are now actively used at all its structural and functional stages. It is important to note that in the modern information society, the librarian acts as an information specialist, and the digital era dictates its requirements for his competence.

The purpose of this paper is to determine the necessary competencies of library employees in the digital age.

Analysis of models of digital competencies of university library staff

Competences of the professional librarian of an era of digital communications consist of knowledge, abilities, skills and personal qualities. Today the librarian needs both general cultural knowledge, including knowledge of history, art, literature, the basics of philosophy, pedagogy, psychology and other sciences, as well as knowledge of the system of legislative acts governing the field of protection of intellectual property rights. In addition, the librarian needs an understanding of the role and tasks of libraries in the digital communication system, an understanding of the organizational structure of information activities. As the necessary skills, it is necessary to highlight the skills of working with major digital devices, searching and evaluating information from various devices. Of the personal qualities, we can note the innovativeness of thinking, activity and initiative, flexibility and adaptability of thinking, communication and leadership in combination with the ability to work in a team, the ability to establish and develop partnerships with consumers of information.

As for the development of a model of digital competencies of library employees, a large number of approaches to the formation of a competencies model of organizations employees were revealed during the analysis of the literature.

The most successful version was the multivariate model (for example, Delamare Le Deist, F., Winterton, J., 2005), since one-dimensional models do not adequately reflect the concept of "competence". Multidimensional models more clearly reflect the interaction of knowledge, skills and social components that are key to performance. Competencies necessary for the effective performance of work are reflected in four dimensions: cognitive, functional, social and meta-measurement. Meta-competencies are an entrance that allows you to master competencies. By combining these competencies in different proportions, it is possible to obtain practical competencies located on the faces of this tetrahedron. With such a multidimensional model, all the approaches considered are not in contradiction.

A. Weiss (Weiss A., 1998) listed factors that are considered to determine in the development of competencies as special states of

activity: motivation, abilities, knowledge, understanding, skills, actions and experience. The author cautioned against considering these factors as dimensions of competencies. A. Weiss points to the fact that a person may have competencies and at the same time not be motivated, therefore it is impossible to consider motivation as an element of competence, but motivation is undeniable as a factor in the development of competences.

Mamontova M.S. (Mamontova M.S., 2012) formed a model of information competence of a library specialist, which includes three components: cognitive, activity-creative and personality-motivational. The cognitive component is the completeness of theoretical knowledge, the level of knowledge that constitutes the essence of competence. The activity and creative component is the level of development of abilities and skills in the process of performing professional activities. The value-motivation component is a set of significant motives and values of a library specialist that contribute to the development of information competence, as well as the level of its introspection and self-esteem.

O.V. Makeev offers an integrated approach to building a competency model for a specialist in library and information activities. It is based on a combination of approved regulations and employer requests. For each group of competencies, a basic minimum must be determined (approved by federal bodies responsible for state supervision and ensuring compliance with the requirements for the composition of labor functions, knowledge and skills in approved documents) and a variant part that ensures compliance of the formed competencies with the peculiarities of libraries of various types (public, academic, special) (Makeeva O.V., 2020).

According to M.G. Lee, one of the grounds for developing a model of competencies of a specialist in the library sphere may be a technological approach. Its potential makes it possible to establish links between fundamental theoretical knowledge and practical activities, where this knowledge turns into specific processes and operations. The library as a technological system is a whole organism, preserving its stability and stability due to the organized interaction of all subsystems. In turn, each of the subsystems can serve as a foundation for identifying competencies. This makes it possible to create a system of professional competencies of a high level of the organization, which will reflect the essence of a competent approach – the development of qualities that allow a specialist to quickly respond to changing conditions of professional activity (Lee M.G., 2018).

Thus, the competency model is a set of characteristics that allows an employee of an organization to successfully perform functions corresponding to his or her position.

Materials and methods

Stages of the study

All the work carried out within the framework of this study can be divided into three main stages.

At the first stage, a detailed analysis of scientific sources was carried out, on the basis of which it was possible to identify existing approaches to the definition of the concepts of "digital competence" and "digital competencies".

At the second stage, the state of the problem of developing digital competence and competencies of university library staff in domestic and foreign science and the practice of higher educational institutions in modern conditions was analyzed. The influence of this process on the development of the university library in the conditions of digitalization is emphasized.

At the third stage, experimental work was carried out to develop the digital competencies of library employees at the university. The structure of digital competence of university library staff is defined, including the following components: cognitive, functional-activity, motivational-value and communicative. The content of each component is discussed in more detail. Digital competence profiles of employees of the Scientific Library of the Siberian Federal University are proposed depending on the structure of digital competence and the selected categories of library employees: 1) cataloguers, 2) bibliographers, 3) managers, 4) service department employees).

Experimental base of the study

The scientific library of the Siberian Federal University is the experimental base of this study.

Digital competence model for federal university library staff

The content of the concepts of "competence" and "skills" is multifaceted. As the basic definitions of "competence" and "skills," we shall take the following definitions:

Competence – a multifaceted and multi-structural characteristic of the personality, which establishes various connections between elements (knowledge, abilities and skills, relationships, motives, personal qualities) in the process of activity (Bekuzarova N.V., Ermolovich E.V., 2011).

Skills are a set of the interconnected qualities of the personality (knowledge, abilities, skills, the mastered modalities of action, strong-willed characteristics) providing a possibility of high-quality and productive actions in specific situations (Hutorskoi A.V., 2003).

Digital skills are necessary both for the fulfillment of professional tasks and for the full interaction of the individual with the outside world and the solution of everyday tasks.

Based on psychological ideas about the structure of the personality and on psychological and pedagogical judgments about the structure of competence, as well as by conducting a comprehensive analysis of the draft professional standard of a specialist in information and library activities, the professional activities of library employees, approaches to describing key and professional digital competencies, it is possible to determine the structure of digital competence of university library employees.

The following components are identified in the structure: cognitive, functional and operational, motivational and valuable and communicative. Consider the content of each component in more detail.

The cognitive component includes knowledge, abilities, skills and experience of intellectual activity necessary for effective processing of professionally significant digital information. This includes ideas about the prospects for the development of a digital society, trends in the digitalization of higher education and library activities, knowledge of the principles of information and data management technologies (Big Data, blockchain, virtual (VR), augmented (AR) and mixed reality (MR)), understanding the fundamentals of cybersecurity and digital hygiene.

Functional and operational includes a set of abilities and skills for using digital technologies to solve professional problems, including knowledge of methods of library and information activities based on digital technologies. The use of this component in professional activities means that the library employee must be able to perform the relevant work and be able to demonstrate high standards within the framework of his functional duties at a particular workplace using modern information technologies. This includes the ability to use basic methods, methods and means of production, storage, processing of information for implementation of different activities of libraries in digital environment, the ability to digitize the library stock and apply standards for describing and indexing electronic documents, skills of searching and evaluating digital information in various sources corresponding to the profile of scientific and educational programs of the university, understand the basics of scientific and bibliometric processes in the digital environment, the ability to digitally monitor and analyze the publication activities of university employees, and provide digital information that meets the needs of users.

Motivational and valuable includes understanding the responsibility and safety of the use of digital technologies in professional activities, taking into account social and legal norms, readiness to increase the level of development of digital professional competence. This includes the ability to apply laws and other regulatory legal acts of the Russian Federation, the regulating questions in spheres library and archiving, information, information technologies and information security, copyright and related rights in the digital environment, the ability to evaluate the achievements of bibliographic and informational work of domestic and foreign libraries, analyze and predict user

requests, the ability to create a positive image of the library in a digital environment, willingness and skills to contribute to the development of digital competencies and the formation of a digital culture of colleagues and users of the library.

Communicative includes the ability to use communicative techniques and services to carry out productive professional interaction in a digital environment. This component allows you to describe the ability of a person to communicate qualitatively and efficiently with other people in a digital environment, using various digital means that allow you to interact with other people to achieve your goals. At the professional level, it is necessary to be able to adequately interact with colleagues and users of the library, make the right decisions even in stressful situations and overcome difficulties of various nature. This includes the ability to use digital services in communication with colleagues and users of libraries, readiness to participate in digital professional collaborations, the ability to organize library design activities using digital technologies, and the skills to work with digital services to plan the work of library structural divisions.

Let us highlight and consider in more detail the main categories of university library staff:

1) **Cataloguers** – employees of the university library, ensuring the compilation of a bibliographic description of the document and the formation of access points, indexing the content with classification indexes, subject headings and keywords in accordance with established standards and rules, as well as carrying out work on the organization and maintenance of card and electronic catalogs, including their editing.

2) **Bibliographers** – employees of the university library who carry out work on organizing the library reference and bibliographic apparatus in a traditional and automated mode, as well as performing reference and bibliographic and information services for readers.

3) **Managers** – employees of the university library, leading the scientific, production, economic and financial and economic activities of the library, the centralized library system, as well as organizing the interaction of the structural divisions of the library and directing their activities to the development and improvement of the library, taking into account social and cultural priorities and the modern level of library development.

4) **Employees of the service departments** – employees of the university library who perform work on providing library processes in accordance with the direction and technology of one of the production areas (staffing, processing of the library fund, organization and use of catalogs and other elements of the reference and bibliographic apparatus, maintenance and use of automated databases, accounting, organization and storage of funds, servicing readers and subscribers).

Based on the above-described structure of digital competence and the selected categories of university library staff, we present the Digital Competence Model (see Table 1).

Based on this digital competency model, you can distinguish special (specialized) competency models that describe certain competencies and standards of behavior of employees in the course of a particular activity. Competency Profile – a list of competencies related to a particular position. The competency profile determines not only what is expected of employees, but also how they should act.

Conclusion

Thus, the rapid development of electronic library resources necessitates the formation of highly competent professionals who are fluent and efficient in digital technology. Knowledge of digital technologies determines the need for library specialists to develop digital competence. In today's environment, digital competence should be seen as an important professional development resource that ensures the mobility of library staff. But it is already clear that a significant number of employees with developed digital competencies in the organization will provide her with a competitive advantage.

The proposed model of digital competence of librarians was developed on the basis of the experience of the Scientific Library of the Siberian Federal University. It unleashes the poten-

Table 1. Digital competence model of a library employee of a federal university (in accordance with the categories of specialists in library and information activities)

Employee category	Digital Competency Components			
	Cognitive	Functional and operational	Motivational and Valuable	Communicative
1	2	3	4	5
Cataloguers	Knowledge of the procedure for formation, scientific processing and disclosure, ensuring preservation, accounting of the library document fund in the digital environment; Knowledge of theoretical and practical methods of information processing using modern technologies; Knowledge of regulatory and methodological documents on the security of library collections	Collection of the library fund with electronic documents, network resources; Microcopy and digitization of the library stock; Organization and maintenance of electronic/traditional catalogs; Storage, processing of information for implementation of different activities of libraries in digital environment; Use of electronic document description and indexing standards	Knowledge of the fundamentals of cybersecurity; Knowledge of basic methods of development of critical and creative thinking	Participation in digital professional collaborations; Use of digital communication programs in communication with colleagues in the course of professional activity
Bibliographers	Knowledge of new forms of library processes and integration with partner systems (fundamentals of scientific and bibliometric processes, etc.); Knowledge of the fundamentals of librarianship, bibliography, information work; Knowledge of achievements of bibliographic and informational work of domestic and foreign libraries	Library and information activities based on digital technologies; Use of multimedia tools in information and library activities; Monitoring and analysis of university staff's publication activities	Development of library and information projects; Creative approach to solving problems; Anticipation of user requests (proactivity); Knowledge of the fundamentals of cybersecurity; Knowledge of basic methods of development of critical and creative thinking	Use of modern means of communication in the process of information and library activities; Promoting the development of digital competencies and the formation of a digital culture of library users; Participation in digital professional collaborations; Use of digital communication programs in communication with colleagues in the course of professional activity
	Knowledge of the development prospects of the digital society; Knowledge of trends in digitalization of higher education;	Optimize information and library processes with digital technologies Organization of library cultural and educational, edu-	Self-motivation and motivation of colleagues; Manifestation of positive emotions; Understanding the state of another person (empathy);	Creating a positive image of the library in a digital environment; Participation in digital professional collaborations;

Conclusion of Table 1

1	2	3	4	5
Managers	Knowledge of digitalization trends in library activities; Knowledge of the main directions of development of digital technologies; Knowledge of new technologies of library automation system; Knowledge of the prospects of technical, economic and social development of the cultural and library industry	cational and event events; Organization of library project activities; Planning of library structural subdivisions	Knowledge of the fundamentals of cybersecurity; Knowledge of basic methods of development of critical and creative thinking	Use of digital communication programs in communication with colleagues in the course of professional activity
Service Department Employees	Improvement of professional knowledge and skills in the field of library and information processes in the digital environment; Knowledge of digital library and information technologies	Remote user service; Maintenance of library sites/portals, network social services; Use of psychological and pedagogical approaches and methods in online service of different user groups	Manifestation of positive emotions; Understanding the state of another person (empathy); Self-motivation and motivation of its readers; Anticipation of user requests (proactivity); Knowledge of the fundamentals of cybersecurity; Knowledge of basic methods of development of critical and creative thinking	Use of digital communication programs in communication with users in the process of library services; Participation in digital professional collaborations; Use of digital communication programs in communication with colleagues in the course of professional activity

tial of the employee, helps his effective work. The model is determined by the structure of digital competence of university library employees (components: cognitive, functional and operational activity, motivational and valuable and communicative) and the selected categories of library employees (categories: cataloguers; bibliographers; managers; employees of service departments).

The digital competence model of librarians is necessary in the library, as it will solve various tasks in the field of personnel management, move the library to achieve strategic goals and meet the needs of users. It is developed on the basis of corporate culture, strategic plans and other aspects, individual for each university library.

It should be borne in mind that each library has its own characteristics, norms of corporate culture, so it is not always reasonable to use standard models of competence. Nevertheless, the application of the proposed model may be justified in the libraries of the country's leading universities.

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Model for Forming Readiness for Online Mediation of Masters of Psychological and Pedagogical Direction

Ekaterina A. Alekseeva* and Olga G. Smolyaninova
Siberian Federal University
Krasnoyarsk, Russian Federation

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Abstract. The results of a theoretical analysis of Russian and foreign practices and educational programs on the mediation of higher educational institutions are presented. The insufficiency of methodological study of the possibilities of using remote technologies in the activities of mediators in the education system is proved due to the lack of their professional training. The authors believe that the readiness for online mediation in the conditions of informatization of education directly depends on the formation of not only mediative, but also digital competencies. The paper proposes a methodological model for the formation, development and evaluation of the constituent elements of mediative and digital competencies. The methodological model, which includes value-motivational, conceptual, content, technological and evaluative-effective components, is based on an electronic professionally-oriented educational and methodological complex for online mediation. The results of experimental work as part of the introduction of a methodological model into the educational process of masters of the psychological and pedagogical direction recorded a positive trend in relation to all elements of mediative and digital competencies, in particular, an increased interest in self-development, self-knowledge in the information and communication environment, awareness of the values of using distance technologies in professional activities, a high level of knowledge of online tools and the ability to use them at different stages of the procedure, the ability to prevent digital risks and assess their own professional deficits.

Keywords: online mediation, mediation competence, digital competence, methodological model, professionally oriented educational and methodological complex.

Research area: pedagogy.

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* Corresponding author E-mail address: katushechka157@gmail.com

Модель формирования готовности к онлайн-медиации магистров психолого-педагогического направления

Е.А. Алексеева, О.Г. Смолянинова
Сибирский федеральный университет
Российская Федерация, Красноярск

Аннотация. Представлены результаты теоретического анализа российских и зарубежных практик и образовательных программ по медиации высших учебных заведений. Доказана недостаточность методологической проработки возможностей использования дистанционных технологий в деятельности медиаторов в системе образования ввиду дефицитарности их профессиональной подготовки. Авторы полагают, что готовность к онлайн-медиации в условиях информатизации образования напрямую зависит от сформированности не только медиативной, но и цифровой компетентностей. В работе предложена методическая модель формирования, развитие и оценки составляющих элементов медиативной и цифровой компетентностей. Методическая модель, включающая ценностно-мотивационный, концептуальный, содержательный, технологический и оценочно-результативный компоненты, основана на электронном профессионально-ориентированном учебно-методическом комплексе по онлайн-медиации. Результаты опытно-экспериментальной работы в рамках внедрения методической модели в образовательный процесс магистров психолого-педагогического направления зафиксировали положительную динамику в отношении всех элементов медиативной и цифровой компетентностей, в частности, повышенный интерес к саморазвитию, самопознанию в информационно-коммуникативной среде, осознание ценностей использованию дистанционных технологий в профессиональной деятельности, высокий уровень знаний онлайн-инструментов и умения их использовать на разных этапах процедуры, умения предотвращать цифровые риски и оценивать собственные профессиональные дефициты.

Ключевые слова: онлайн-медиация, медиативная компетентность, цифровая компетентность, методическая модель, профессионально ориентированный учебно-методический комплекс.

Научная специальность: 5.8.2 – теория и методика обучения и воспитания (по областям и уровням образования)

Introduction

The need to introduce online mediation is dictated by the need for specialists to ensure the formation of a safe educational environment in the face of increasing conflict in educational institutions, the development of various forms of destructive behavior, the complex specifics of work in educational institutions, the possibilities of remote technologies, and at the same time the insufficient methodological development of educational programs for the use distance technologies in mediation activities and the educational system as a whole.

The situation with the COVID-19 pandemic has caused fear and anxiety among people around the world, had a negative impact on their psychological state, contributed to the rapid and large-scale transition of all

areas of activity to the digital environment, and led to an increase in conflict potential. According to statistics for 2020, emotional shock during self-isolation and a sharp transition to distance learning affected the mental health of students and led to mental borderline disorders in 83.8 % of cases, only 13.4 % of students adapted to these conditions (Popov, Aleksandrova; 2020: 28–35), (Jakobuk, Vinogradova; 2018: 242–246). At the same time, the educational system was not ready to quickly adapt educational programs to a distance environment, provide psychological and pedagogical support, and take preventive measures (Altbach, Hans de Wit; 2020: 6–8), (Maliataki, Kirichek, Vendina; 2020: 56–66). Many universities are faced with the unavailability of teachers and platforms used to use high-tech equipment (Grunt, Belyaeva, Lebedkina; 2021: 192). As a result, the need has increased to use more effective ways to resolve conflicts, to solve the problems of creating a restorative culture of relations in an educational institution, which underlies the activities of a teacher-psychologist (mediator), and to train specialists for online mediation.

In the modern education system, attention is focused on ensuring equal access to education, regulated by the Federal Law of December 29, 2012 N 273-FZ (as amended on December 30, 2021) «On Education in the Russian Federation», the federal project «Success of every child» of the national project «Education», Strategy for the development of the Arctic zone of the Russian Federation and ensuring national security for the period up to 2025.

The results of a theoretical analysis of regulatory documents (Federal Law «On Education in the Russian Federation», Decree of the President of the Russian Federation of May 9, 2017 «Strategy for the Development of the Information Society of Russia for 2017–2030», the national program «Digital Economy of the Russian Federation», «Strategy for the Development of Information Technologies in Russia for 2014–2020 and until 2025») determine the need for the development of distance technologies in the educational system and the training of specialists with digital competence. That is why the strategic direction is the use of remote technologies as an opportunity to apply new forms of work organization.

The need for the introduction and development of online mediation as a tool for creating a comfortable educational environment and ensuring equal access for students to education is associated with the widespread introduction of distance technologies in all spheres of life. The latter actualizes the problem of the lag in the adaptation of legal acts, educational programs and methodological framework to the training of mediators who own remote technologies, the poor theoretical knowledge of this issue and, as a result, the lack of a single conceptual and categorical apparatus in relation to online mediation.

Along with this, S.G. Grigoriev, V.V. Grinshkun (Grigoriev, Grinshkun; 2008: 71–78), M.V. Noskov, V.A. Shershneva, R.A. Baryshev, M.M. Manushkinv (Noskov, Shershneva, Baryshev, Manushkinv; 2016: 151–155), S.I. Osipova, N.V. Gafurova (Osipova, Gafurova; 2010: 117–124), O.G. Smolyaninova, E.S. Egle, N.A. Ivanov (Smolyaninova, Ivanov; 2019: 97–101), (Smolyaninova, Egle, Ivanov; 2020: 1481–1498) note the importance of mastering distance technologies by educational psychologists, their active participation in the formation of an information educational environment, including on the basis of electronic educational resources that promote new educational opportunities, personal, cognitive and socially oriented development, a high level of individualization of the information offered, based on the capabilities of students. The development of the process of informatization of education is especially emphasized by providing the educational environment with methodology and practical developments aimed at the optimal use of new information technologies in the process of implementing psychological and pedagogical education.

The necessary knowledge, skills and abilities for the implementation of the mediation procedure using distance technologies in the educational system are considered by O.G. Smolyaninova, V.V. Korshunova, O.O. Andronnikova (Smolyaninova, Korshunova, Andronnikova; 2020: 413–428). The need for the formation of significant personality

traits in the profession of a mediator, such as empathy and neutrality, was noted in the work of O.G. Smolyaninova, S.T. Possokhova, M. Kh. Izotova (Smolyaninova, Posokhova, Izotova; 2020: 219–230). Thus, the mediator's key competencies in the conditions of informatization of training include mediative and digital, as well as the ability to determine the moral and social value in relation to professional activity. However, the structure of mediative and digital competencies is multifaceted, which is why, having synthesized the approaches of L. Vygotsky, A. Leontiev, V. Slastenin, the constituent elements of mediative and digital competencies include motivational-value, cognitive, activity-operational, reflective-personal, evaluative-effective, allowing to most fully reflect the entire range of knowledge, skills and abilities necessary for the successful implementation of the online mediation procedure.

The effectiveness of the formation of knowledge, skills and abilities in the conditions of informatization of training is determined by A.N. Pryadyokho, A.A. Pryadyokho (Pryadyokho, Pryadyokho; 2008: 51–56), I.V. Fominykh (2014: 307–309) in the context of the development and implementation of an educational and methodological complex as a didactic tool that ensures meaningful and productive activities of students and educators to achieve the goal with the maximum possible effect. At the same time, E.N. Zemlyanskaya (Zemlyanskaya; 2013: 35–43), N.A. Kozyrev, O.A. Kozyrev (Kozyrev, Kozyreva; 2011) associate long-term planning of educational activities with its modeling, which is an effective method of cognition and research of an object, its optimal design by reflecting the relevant and essential properties of the original, the possibility of gradual adjustment of the goals, content and organizational structure of professional training.

Based on the foregoing, the formation of readiness for online mediation of masters of the psychological and pedagogical direction is understood as a pedagogical process that is carried out when implementing the methodological model by means of an electronic professionally oriented educational and methodological complex for online mediation (hereinafter referred to as EUMC), aimed at developing the constituent elements of mediation and digital competencies.

Theoretical framework

Currently, researchers in the field of pedagogy, psychology and computer science pay special attention to the training of specialists who own remote technologies, the adaptation of educational programs and methodological bases to the digital environment, and ways to minimize conflict factors (Smolyaninova, Ivanov, Podusova; 2021: 1308–1321). Such interest is due to the increasing level of conflict in the educational system, the development of new forms of destructive behavior such as school-shutting, cyberbullying, etc., leading to suicidal actions, and new requirements that apply to specialists at the state level.

Online mediation is rightly considered in the context of an alternative mediation procedure. For example, E. Katsh, J. Rifkin (Katsh, Rifkin; 2001: 155–179) understand online mediation as a method for resolving conflict situations based on alternative dispute resolution methods via the Internet, when traditional means of conflict resolution become ineffective or inaccessible. In turn, O.G. Smolyaninov and V.V. Korshunova (Smolyaninova, Korshunova, Andronnikova; 2020: 413–428) emphasize the need to integrate knowledge from the pedagogical field, psychology and anthropology in order to implement a mediative procedure and conduct rehabilitation programs in order to promote favorable interaction between the subjects of the educational process.

The tasks of the online mediator are complemented by the choice of online tools at various stages of the conflict in order to eliminate misunderstanding between the parties to the dispute, online risks during the online mediation procedure, while maintaining the confidentiality of the procedure (Smolyaninova, Alekseeva; 2022: 168–190).

Therefore, the training of specialists with digital competence and the large-scale implementation and development of the online mediation procedure are impossible without a theoretical understanding of the specifics of the online mediator's activities, the capabilities

and specifics of online tools, how they can be used at different stages of the procedure, and the methodological development of appropriate educational programs in the design effective educational environment in terms of informatization of training.

The study is based on a systematic approach that allows us to consider the components of the methodological model for the formation of readiness for online mediation of masters of the psychological and pedagogical direction as a holistic pedagogical process, carried out in the conditions of informatization of society. The activity approach orients the educational process for the formation of readiness for online mediation of masters of the psychological and pedagogical direction to the priority use of active learning technologies.

A comprehensive consideration of the educational results of the methodological model of formation of readiness for online mediation based on the EUMC, as consisting of motivational-value, cognitive, activity-operational, reflective-personal, evaluative-effective elements, is possible through the use of a competency-based approach. And, finally, taking into account the personal characteristics and needs of undergraduates of the psychological and pedagogical direction in the conditions of informatization of training, the activation of the processes of self-knowledge, self-government are possible through the use of a personality-oriented approach.

Statement of the problem

There are many studies on the training of mediators, but they do not take into account: the dynamic nature of the process of formation of readiness for the mediation procedure due to constantly improving information technologies; transformation of the systemic vision of the subject of activity in the context of modern «digitized» conditions for the functioning of the professional industry.

Russian and foreign researchers equate the terms “online mediation” and «online dispute resolution», violating the basic principles of the mediation procedure. The conceptual and categorical apparatus, which is important for the implementation of the mediation procedure using remote technologies, for example, «online mediator», «remote online mediation technologies», «online mediation tools online», is completely absent. The theoretical study of the practices of using online tools in resolving conflict factors, how to use online tools at different stages of the conflict, is devoted to the minimum amount of research. The issues of the essence of the online mediation procedure in the education system are considered in more detail by the scientific school of O. G. Smolyaninova (Smolyaninova, Gruzdeva, Smolyaninov; 2021: 346–361), (Smolyaninova, Alekseeva; 2022: 168–190), identifying successful practices, online tools and shortcomings of the legislative regulation of mediation.

Among the master’s programs for the preparation of mediators, there are over 90 around the world. They train specialists in resolving conflict factors in education, family relationships, jurisprudence, etc. However, the term «mediation» itself is included in the name of a few of them: International University of Valencia «Mediation and Conflict Management», MSUPE «Mediation in the Social Sphere» (Moscow), IPPSF SFU «Mediation and conflict management in education» (Krasnoyarsk), SFU «Primary prevention of addictions and mediation» (Rostov-on-Don), etc. In Russia, there are over 30 master’s programs in the field of resolving social conflicts at 24 universities across the country. But to a greater extent, the emphasis is on the resolution of disputes in the legal field and interdisciplinary interaction. To a lesser extent, educational programs are devoted to the mediation process in the educational environment. The methodological foundations of educational programs on mediation contain disciplines for the application of innovative processes in conflict resolution, as well as distance technologies at the level of universal competencies.

Methods

The methodological basis of the study was theoretical methods (analysis of philosophical, psychological and pedagogical, normative, methodological literature on the research prob-

lem; hypothetical-deductive, generalization, analogy), empirical (verification, testing, comparison, projective methods, interviewing, survey), statistical (stratified sampling, sampling analysis, comparison).

Discussion

Training of mediators in the conditions of informatization of education

The problem of training modern specialists raises the question of modifying the forms of organization of the educational process, adjusting educational programs. The teacher should have not only knowledge in the field of ICT, dictated by the course of computer science, but also be able to apply innovative technologies in pedagogical activity (Chernobay; 2010: 90–96).

As a result of the theoretical analysis of the Federal State Educational Standards of Higher Education (3 ++) in the direction of the master's program «Psychological and pedagogical education», the Professional standard «Teacher (pedagogical activity in the field of preschool, primary general, basic general, secondary general education)», the Professional standard «Specialist in the field of mediation (mediator)» in terms of expanding the basic meanings of the conflict component and developing the necessary knowledge, skills, abilities dictated by the informatization of society and education, contradictions were revealed between the requirements for the educational system, mediators and the conditions for teaching the mediation procedure, restorative practices. The scarcity of research in the field of online mediation, the lack of legal documents and educational programs in relation to this procedure are most sharply emphasized.

At the same time, the direction of master's programs in the field of mediation in the educational system is justified due to a number of adopted documents: in 2013, the professional standard of a teacher, which implies the ability to diagnose, resolve and prevent conflict factors, and also in November 2013, the decision to create school services mediation, adopted by the Ministry of Education and Science of the Russian Federation.

Essential characteristics of online mediation

In the course of theoretical understanding of foreign and Russian practices of using remote technologies in conflict resolution, technologies and mechanisms of online mediation have been identified, which consist in the use of psychological and communication techniques and techniques, online tools at certain stages of the conflict.

Different interpretations of the term «online mediation» by foreign researchers are associated with the identification of the terms «online mediation» and «online settlement (resolution) of disputes», which violates the basic principles of the mediation procedure and loses the semantic characteristics of «online mediation». Based on the approaches of Russian and foreign researchers, by «online mediation» we mean the process of resolving conflict factors with the help of a mediator using remote technologies, which preserves the basic principles of the mediation procedure, and we consider it through the definitions of mediation activity through a competency-based approach.

The online mediation procedure is characterized by the preservation of the stages of the alternative procedure, psychological and communicative tactics and techniques (Smolyaninova; 2020: 1428–1434), while online tools act as auxiliary tools that contribute to the operational method of conflict resolution, and at the same time online mediator new knowledge and skills, including in relation to the elimination of digital risks during the procedure.

Based on the study of O. G. Smolyaninova, E. A. Alekseeva (Smolyaninova, Alekseeva; 2022: 168–190), «online mediation tools» are defined as part of «remote technologies», including platforms for creating websites, visualizing data, conducting sociological research and text, audio, video communication online mediator in relation to the parties to the conflict in order to promptly prevent conflict factors.

On the basis of synthesizing successful practices of using remote technologies in conflict resolution, types of online tools are structured: e-mail, online platforms, social networks, applications, proprietary programs. At the same time, the main digital risks that

violate the basic principles of the mediation procedure are highlighted: illegal receipt or transmission of unprotected information through online platforms, services, etc., information leakage during the transfer of document flow, recording by the parties to the conflict of an online session with subsequent transmission of data, eavesdropping of online sessions by other persons, the complexity of the electronic signing of the mediation agreement.

Competencies of an online mediator

Having studied the essential characteristics of the competence-based approach (Ermolovich, Timoshkov; 2020: 1499–1508), (Smolyaninova, Korshunova, Andronnikova; 2020: 413–428), an insufficient level of methodological developments for its implementation in the process of preparing mediators for professional activities using remote technologies.

Modern methodological approaches to the formation of mediative and digital competencies have confirmed the versatility of their content. In particular, mediative competence implies the possession of communicative, information-analytical, organizational and managerial, emotional and motivational competencies. Digital includes information, communication, technical, consumer and media competence. For a more complete understanding of the content of mediative and digital competencies, by synthesizing the approaches of A. A. Dubaseniuk, L. Vygotsky, A. Leontiev, V. Slastenin, readiness for online mediation is determined by the level of leading competencies (mediative and digital) in accordance with the constituent elements: motivational-value, cognitive, activity-operational, reflective-personal, evaluative- productive.

Mediative competence in terms of readiness for online mediation is understood as an integrated, dynamic personal quality that determines their ability to consciously integrate into professional activities, use the necessary knowledge, skills and abilities depending on the needs of the parties to the conflict and the specific features of the conflictological component, adequately perceive their own feelings, emotions, actions as a result of evaluating the effectiveness of the mediation process.

Digital competence in terms of readiness for online mediation is defined as an integrated, dynamic personal quality, which consists in the ability to confidently, safely and effectively identify and use remote technologies in conflict resolution, build productive interaction in the information space in order to minimize the conflict component, and be aware of the role of remote technologies. in the process of resolving disputes and identify their own professional deficits for continuous self-improvement.

Formation of readiness for online mediation

The formation of readiness for online mediation of masters of the psychological and pedagogical direction is understood as a pedagogical process aimed at the formation, development and evaluation of the constituent elements of mediative and digital competencies using educational modeling by means of the EUMC (Fominykh; 2014: 307–309), (Kozyrev, Kozyreva; 2011), (Pryadyokho, Pryadyokho; 2008: 51–56).

The developed methodological model for the formation of readiness for online mediation is structural and functional, as it reflects the internal organization of the original and the behaviors characteristic of this system, and contributes to the formation of readiness for online mediation of masters of the psychological and pedagogical direction using EUMC.

The proposed methodological model for the formation of readiness for online mediation of masters of the psychological and pedagogical direction consists of five components: target, conceptual (approaches, principles), content, technological, result-evaluative.

1. *The motivational-target component* of the methodological model is aimed at the formation and development of a set of professional competencies (mediative and digital), which allow successful prevention of conflict resolution using remote technologies and effectively realize their own potential. At this stage, internal readiness is determined, a stable need for the implementation of the function of a mediator.

2. *The conceptual component* is represented by principles and approaches that contribute to the effectiveness of the educational process in the context of digitalization of training.

The methodological model is based on system-activity, personality-oriented, competence-based, digital, and medial approaches. The effectiveness of the pedagogical process for the formation of readiness for online mediation is determined by the principles of activity, independence, visibility, consistency, systematic, informatization, modularity, practice-oriented.

3. The completeness and effectiveness of the educational process in the context of informatization is ensured by a *meaningful component*, including an electronic professionally oriented educational and methodological complex for online mediation. A significant component of the educational and methodological complex is the inclusion of regulatory, educational and methodological components that provide students with a high-quality mastery of disciplines: RPD and FOS, electronic educational courses, presentations, recommended literature, teaching aids, control and diagnostic materials, etc.

The presented disciplines «Multicultural mediation: theory, practice, experience» and «Online mediation as a means of socialization of children with disabilities in the Arctic and the Far North» are based on the modular principle of education and are aimed at developing mediation skills, the ability to use online tools in conflict prevention in the process of solving non-standard tasks and designing a safe educational environment. Disciplines are implemented on the e-Courses and e-Siberia online platforms and involve remote interaction in the process of classroom and extracurricular work.

4. *The technological component* of the model and the effectiveness of the development of the constituent elements of mediative and digital competencies in the course of mastering disciplines is provided by current and final control, which are the most important components of the educational process.

Each module of disciplines includes intermediate tasks of various formats: case studies, reports, forum theater, debates, tests, etc. The result of mastering the first discipline is testing, and the level of mediative and digital competencies in the course of mastering the discipline of online mediation is demonstrated by defending the project.

The motivational-value component of mediative and digital competencies in the implementation of the disciplines developed by us is increased through the use of interactive and active learning technologies as the main condition for consolidating mediative and digital knowledge, skills and abilities in the process of solving non-standard tasks.

5. *Reflective-evaluative component*, characterized by a stable motivation for self-knowledge, self-development and self-improvement in professional activities; readiness to show responsibility for the work performed; the ability to independently and effectively solve problems in the field of professional activity, is measured by various valid methods in relation to each constituent element of mediative and digital competence.

Shows the integration of methods in assessing the level of motivational-value, cognitive, activity-operational and reflective-personal elements of mediative and digital competencies, which indicates their relationship and the need for integrated development for the effective implementation of the mediative procedure using remote technologies.

Results of experimental work

Master students of the Institute of Pedagogy, Psychology and Sociology of the Federal State Autonomous Educational Institution of Higher Education « Siberian Federal University», studying in the direction of training (specialty) 44.04.02 «Psychological and Pedagogical Education», in the amount of 84 people. Of these, 42 students were included in the control group, 42 in the experimental group.

In the experimental group of students, classes in disciplines were conducted in accordance with the developed methodological model by means of an electronic professionally oriented educational and methodological complex for online mediation, based on the principles of visibility, activity, consistency, system-

atization, informatization, independence, and modularity.

The results of the analysis of the level of formation of the constituent elements of mediative and digital competencies among the control and experimental groups at the ascertaining stage showed a similar initial level. To confirm the homogeneity of the data, which is expressed in the absence of significant differences in the sample of control and experimental groups, the method «Paired two-sample t-test for means» was used according to the Student's distribution.

A diagnostic study at the control stage after the introduction of a methodological model for the formation of readiness for online mediation made it possible to identify the dynamics in the formation of the constituent elements of mediative and digital competencies. To a greater extent, this effect manifested itself in the experimental group: the proportion of students with a «high level of mediative competence was 56 %, and digital – 53 %.

At the control stage, the experimental group recorded an increased interest in self-development, self-knowledge in the information and communication environment, awareness of the values of using remote technologies in the professional field (motivational-value component). Demonstrated a «high» level of knowledge of online tools and their essential characteristics, risks and opportunities for functioning in the digital space and a "medium" level in terms of understanding the essence of information activity, knowledge of office software products, basic services and methods of working in a digital environment (cognitive component). The predominantly "average" level of the activity-operational element of digital competence is shown, the skills of striving for introspection, self-development, cognition (reflexive-personal component) and high results in terms of regulatory assessment of one's own mediative knowledge, skills and abilities in a professional environment (evaluative-effective component) are demonstrated.).

The results of an expert survey on the study of effective ways to develop mediative and digital competencies, conducted among teachers of the master's program in the psychological and pedagogical direction of the Institute of Pedagogy, Psychology and Sociology of the Siberian Federal University (20 respondents), confirmed the need to develop these competencies to form the readiness for online mediation of masters of psychological and pedagogical pedagogical direction. At the same time, emphasizing the effectiveness of using interactive and active learning technologies such as modular learning, case technology and project-based learning.

Conclusion

The informatization of society and education, the directions of state programs, the increased conflict potential in educational institutions require the improvement of the training of psychologists taking into account modern requirements and update the development of a methodological model for the formation of readiness for online mediation by means of EUMC as an effective way to resolve conflicts in the educational environment.

In accordance with the results of experimental work, it can be stated that the formation of readiness for online mediation of masters of the psychological and pedagogical direction is a pedagogical process aimed at developing the constituent elements of mediative and digital competencies. Developed and tested methodological model, including motivational-target, conceptual, meaningful, technological and reflective-personal components. contributes to the development of readiness for online mediation

The effectiveness of the methodological model is dictated by the content component – an electronic professionally oriented educational and methodological complex for online mediation, based on the principles of modularity, practice orientation, systematization, activity, systematicity, independence, visibility, informatization and including normative, educational and methodological blocks that provide high-quality mastering by students of the content of disciplines in the field of mediation and online mediation and the comprehensive formation, development and assessment of the constituent elements of mediative and digital competencies.

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