EdCW 2020
International Scientific and Practical Conference Education in a Changing World: Global Challenges and National Priorities

APPLICATION OF DISTANT EDUCATIONAL TECHNOLOGIES DURING COVID-19 PANDEMIC: RUSSIAN AND INTERNATIONAL ASPECTS

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Abstract

The problems arising in the course of transition to the digital form of education which are common for the majority of countries are analyzed in the present scientific paper. The basic challenges for all the groups involved in the process of transition to the on-line medium – schoolchildren, teachers, parents as well as decision makers – are considered in the article. On the basis of the studies of the above problems and considering progressive experience of different countries the authors suggested practical recommendations for introduction of on-line education. Thus, it is considered to be urgent to apply the existing educational platforms along with the novel ones as well as establishment of international cooperation aimed at interchange of educational on-line resources. It is substantiated that the crisis in educational system caused by COVID-19 pandemic reveals vulnerability in educational systems; it also stimulates the states and the societies to innovations and the development of inclusiveness. Under such conditions the tasks of paramount importance should be as follows: strategic planning and taking account of attendant risks for prediction of short-term and long-term aftereffects of pandemic, development of measures to support students and teachers, organization of teaching staff training with the aim of mastering the peculiarities of on-line functional, searching the ways of effective transition to on-line teaching, bringing to conformity the procedures and criteria of knowledge with a new on-line schedule and pedagogical approaches. This will allow the quality of teaching to be ensured in future and innovative educational technologies to be substantiated.

1. Introduction

The governments of the countries worldwide made a decision to close educational institutions in order to contain global COVID-19 pandemic. According to the data submitted by UNESCO 188 states closed schools all over the country which involved 91.3% of students across the globe (1.58 billion). In some other countries schools were closed by regional authorities. If schools and higher educational institutions are closed throughout those countries this will lead to disruption of educational process for millions of other students.

Even a temporary closure of schools have great social and economic consequences which are of a particular significance for low-income population:

- interrupted training: children and young people are deprived of a chance to grow and develop. This primarily concerns children from low-income families since they do not have the opportunity to get education outside the school;
- problems with food supply: many children get free or reduced-price meals at schools;
- problems with child care: in the absence ofthe of alternatives working parents are to leave their children alone which may be dangerous for their lives and health;
- high economic costs: working parents are forced to skip work in order to take care of their children which often results in loss of wages and produces a negative effect on productivity;
- additional load on the public health service: women constitute the largest part of health workers and they often cannot attend work because of the necessity to take care of the child. This means that a great number of medical workers are not present at the healthcare institution during the crisis in the sphere of public health;
- increasing the burden on the schools which remain open: local closure of some schools produce a burden on other ones since parents and officials redirect children to educational institutions which remain open;
- as a rule, the rate of students' dropout increases: it seems to be a difficult task to ensure that children and young people will return to schools after their opening;
- social isolation: schools are the centers of social activity and interaction between people. Many children and young people loose social contacts which are necessary for training and development.

2. Problem Statement

Different aspects of the problems discussed may be found in various publications of foreign authors. Thus, such authors as Tran et al. (2020), Kerimbayev et al. (2020), Sari et al. (2020), Schrüfer et al. (2020), Ginestié and Impedovo (2020) analyzed in their scientific works the aspects of the development of distant and inclusive educational technologies in the modern society. In the works of domestic authors this problematic is studied in the context of analyzing the essence of changes which occur in educational systems of different countries under the impact of COVID-19 pandemic (Bondar',

2020; Bordovskaya et al., 2020; Bukejhanov et al., 2020; Novikova & Ananchenkova, 2020; Orusova, 2020; Petrovskaya & Shaposhniklov, 2020; Yurchenko, 2020, etc). Currently, there is an increasing interest to the problem of urgency of reforming educational technologies in many countries. At the same time, in spite of appearing a great number of works the problem of formation and development of on-line education has not been solved   and requires further studies and elaboration.

3. Research Questions

The main issues which are touched upon in the present scientific paper are as follows:

- the problems which arise in the process of transition to the system of remote education are designated along with the challenges for all the groups involved (schoolchildren, teachers, parents and decision makers);

- on the basis of the designated problems main tasks for implementation of digital education are marked;

- the ways to solve the problems of integration of remote education in the context of international and domestic experience are suggested;

- recommendations for application of remote educational platforms in the period of closing educational institutions are proposed.

4. Purpose of the Study

The goal of the present scientific paper is using the existing statistic and empiric data to analyze the current problems in the sphere of education against the background of COVID-19 pandemic and to propose practical recommendations for their solving in the context of Russian and international aspects.

5. Research Methods

The following scientific methods and approaches have been used in the present scientific research:

- complex approach to the development of recommendations for application of remote educational platforms in the period of closing educational institutions;
- socio-cultural approach in its specific implementation as a socio-cultural pedagogic consideration of the problem the novelty of which is the analysis of socio-economic, cultural and pedagogic environment under new conditions;
- synthesis of nomothetic (investigation of typological recurring phenomena) and ideographic (investigation of structural interactions of the phenomenon) as the most effective way to disclose typological and individual features of socio-cultural pedagogic reality under study;

- ▪ method of interdisciplinary synthesis (application of the results obtained when studying different areas of scientific knowledge: sociology, pedagogy, psychology, economic theory) the novelty of which refers to holistic view on the problem of the development of remote education;
- ▪ author's methods of sociological research taking account of peculiarities in applying remote technologies to educational process adapted for investigation.

6. Findings

To minimize negative consequences following the closure of educational institutions and to create conditions for continuous training particularly for the most vulnerable strata of the population many countries introduce the system of remote learning at schools and higher educational establishments. Thus, in 53 countries national educational platforms for distant learning have already been set up (Bondar', 2020).

So, the problems which arise in the period of transition to the system of remote learning as well as the challenges for all the groups involved (pupils, parents, decision makers) are as follows:

1. Currently, there is a small number of educational systems (even among the high-class ones) with a good technical support allowing a fast transition to distant learning. The results seem to be most successful in those countries in which distant education was widely used prior to pandemic (Yurchenko, 2020).

2. Transition to distant education requires huge costs. Undoubtedly, it is important to provide infrastructural potential. Though, among greater challenges are the support of the teachers; providing high-quality and relevant digital training material; development of digital skills in pupils to use educational technologies effectively; introduction of auxiliary systems for data control (Kerimbayev et al., 2020).

3. Transition to remote learning causes uneasiness in parents because of social differentiation. In practice online learning is disproportionally more beneficial for pupils with initially more advantageous status (e.g., stratification into wealthy – poor; those living in town – those living in countryside; pupils with good school results – pupils with poor school results) (Petrovskaya & Shaposhniklov, 2020).

4. Most pupils will experience difficulties when transferring to distant learning. This means that for most schoolchildren and students education will be less useful. This aspect is particularly urgent for children living in poor districts where internet access is restricted or there is no internet access at all. The pupils having previous experience of remote learning will also gain advantage (Cheng, 2020).

5. It should be kept in mind that at the beginning of the process of transition to distant learning the pupils will show weaker results. This is due to the lack of experience in interaction with learning tools and processes as well as unfavorable conditions for online training at home (Ginestié & Impedovo, 2020). After a while both pupils and teachers will face a challenge of lack of motivation.

6. A question of choice will arise before the educational establishment, i.e. what subjects should be taught on-line and which of them should be offered for self-study. It may be difficult to transfer some subjects and school activities into on-line environment.

7. Not many teachers will be able to realize a fast and effective transition to on-line learning since there is a great difference between remote training and teaching in class (Bukejhanov et al., 2020). This will require a support and additional training for teachers.

8. Under the conditions of distant learning it is parents who play a key role in supporting their children. Even in the most favorable circumstances most parents are not fully ready to exercise effective support for their children, particularly if they do not have sufficient technical skills themselves. There may be several children in a family, so, there will be a problem of available device distribution among them. We should also note additional load on parents with limited health abilities and on those who are employed in sectors which are critically important in struggle against epidemics (Novikova & Ananchenkova, 2020).

9. Decision-makers heavily depend on two factors: readiness of the existing educational system for the transition to on-line training and the amount of time required for closing educational institutions (Bordovskaya et al., 2020). At present, there is no sufficient experience in the world community for determination of volumes and mechanisms of financing the system of on-line training.

In connection with the designated problems the basic tasks arising in the process of introduction of digital training can be defined as follows:

1. It is necessary to set the balance between digital training and the activity "outside the screen". The transfer of off-line schedule to the digital environment may produce a negative effect on pupils' health. Lessons can be shortened and combined with non-digital training methods.

2. It is necessary to follow pupils' emotional state. Closing schools may cause uneasiness in pupils.

3. Governments could provide pupils with portable computers or with other training resources since most pupils have access to smartphones rather than to portable computers. Lack of access to technologies or to a good Internet connection hinders learning for children from disadvantaged families, in particular.

4. The problem of providing access to information infrastructure. In some countries it may be difficult to ensure simultaneous access to information infrastructure for all the pupils.

In the current situation the following ways to solve the problem of introducing remote education can be marked out:

1. Use of a single portal for placement of all the programs, applications, platforms and materials required for learning as well as operating instructions for pupils, teachers and parents. An important task here is providing access to the materials using a great variety of devices including mobile ones.

2. It is very important that the state should attract people having practical knowledge in the field of on-line educational technologies to the process of making decisions (Shibarshina, 2019). Such an obvious solution does not always find its practical application.

3. In case of remote education when pupils use various platforms, applications and tools there are fewer options left for their quality control. In such cases additional measures should be taken to ensure pupils' security especially when programs are provided to the third parties or when there are no mechanisms of legal protection and control in the indicated sphere (Kostrova, 2017).

Consequently, recommendations which concern the use of distant educational platforms in the period of closing educational institutions   can be defined as follows:

1. To use the existing platforms of distant learning. Platforms of distant learning may contain a necessary course or materials for training in various digital formats. If there are not such platforms in the country open educational resources can be used.

2. To develop new educational platforms (virtual classes).

3. To establish cooperation with educational platforms. The main problem of the existing educational platforms is that they cannot be always used in case of a simultaneously great number of users.

Some private companies provided educational institutions with their resources and services free of cost as a support measure against COVID-19 spread.

4. To establish international cooperation for interchange of educational on-line resources. The set of subjects taught in different countries is similar, thus the possibility of translating foreign materials and their application with educational purpose should be considered.

5. To use all electronic means most effectively. Some outdated methods of data transmission (e.g., TV lessons) are most suitable for very young students (as well as in cases when infrastructure development is far behind),

6. To provide teachers with access to the digital learning tools. The government should provide the teachers with the materials concerning on-line training.

As the countries are in the process of preparing their retaliatory measures international cooperation is vitally important for exchanging the most effective approaches to the support of schoolchildren, students, teachers and parents (Tran et al., 2020).

Thus, UNESCO works with the Boards of Education in the affected countries to ensure continuous education for all children and young people using alternative channels:

1. UNESCO provides technical assistance for quick preparation and implementation of inclusive solutions for distant learning using high-technology, low-technology or non-technological approaches (Sari et al., 2020).

2.Webinars are held for the staff of the Boards of Education and other interested parties aimed at interchange of information concerning countries' efforts directed at providing distant learning.

3. Governments, schools, teachers and parents are provided with a variety of digital training resources which can be used to expand opportunities for pupils who cannot attend school.

The lists of digital learning control systems, mass open on-line courses, teaching materials for self-study, tools for creation of digital educational content are presented on the site of the organization. These can be used by the states or by individual educational institutions (Schrüfer et al., 2020).

4. Partnership is developing with the aim of expanding national and local potential of providing distant learning.

5. A global education coalition is being formed under the auspices of UNESCO, which includes international organizations (UNO, WHO, UNICEF, WFP, OECD, World Bank, etc), private companies (Microsoft, Google, Facebook, Coursera, Zoom, Moodle, etc.), NKO and the media. The coalition is designed to assist in providing continuous education for children and young people all over the world.

7. Conclusion

Thus, crisis in education caused by COVID-19 pandemic reveals vulnerability of educational systems and it also stimulates the states and societies to innovations and the development of inclusiveness (Orusova, 2020).

Under the existing circumstances the tasks of paramount importance for the universities will be as follows:

1. Strategic planning and taking account of related risks for prediction of short-term and long-term consequences of pandemic including expected economic recession.

2. Development of support measures for students and teachers: searching the ways for leveling inequality between the students: (Internet access, availability of necessary equipment for all students, suspension of tuition fees, target financial aid, loans for students from disadvantaged families), organization of training courses for teaching staff to master peculiar features of on-line tuition, functional and capabilities of the existing platforms and services (including Google Classroom, Microsoft 365 Groups, WizIQ Moodle, iSpring), organization of a special platform to exchange experience between teachers in the field of on-line learning, joint search for solution of problems arising in the process of teaching, methodological assistance in program adaptation to the forms of on-line training. Leading universities are currently paying special attention to psychological support for their staff and students. The Universities in such countries as Russia and China are most vulnerable in this situation because they lack such a system of support.

3. Search for the ways of effective transition to on-line teaching. In many countries University leaders encourage transition to on-line learning for uncertain period of time irrespective of the terms of quarantine ending. Many universities developed and offer their students the programs of on-line learning. According to the data of Dutch platform Studyportals the interest of the students and their parents towards the programs of distant education has doubled during the recent months.

4. Bringing to the conformity the procedures and criteria of knowledge assessment with a new on-line schedule and pedagogical approaches. Development of methods to assess distant learning will require considerable efforts but this will ensure a high quality of education and validity of final results

5. One of the immediate tasks for the universities in the developing countries should be establishing partnership with foreign universities being ready to share their resources and experience, particularly in the field of on-line teaching and scientific on-line cooperation.

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