

ANALYSIS OF THE RECOMMENDATIONS FOR THE USE OF MOBILE APPLICATIONS IN TECHNOLOGY LESSONS IN ELEMENTARY SCHOOL IN THE CONDITIONS OF DISTANCE LEARNING

АНАЛІЗ РЕКОМЕНДАЦІЙ ЩОДО ВИКОРИСТАННЯ МОБІЛЬНИХ ДОДАТКІВ НА УРОКАХ ТЕХНОЛОГІЇ У ПОЧАТКОВІЙ ШКОЛІ В УМОВАХ ДИСТАНЦІЙНОГО НАВЧАННЯ

The mass use of distance education began in educational institutions of Ukraine during the quarantine period of 2019, but it became most widespread with the beginning of the war in February 2021. If earlier customers of distance education were usually mature citizens, busy with professional duties, then in the period from the beginning of the war in 2021 students of schools, vocational schools, college and university students. They started to conduct it remotely meetings, meetings, conferences, organize defense of theses. Remote communication using video communication began to be used not only for training, but also for managing enterprises and organizations, ministries and even countries. Everyone was convinced of how important it is remote form of communication and learning in particularly critical conditions situations. It is obvious that the skills and methods of distance learning will remain in demand at school, because most schools in Ukraine continue distance learning. Nowadays, phones, smartphones and tablet computers are no longer a novelty for students, even elementary school. In the course of technical progress, digital devices receive more and more powerful processors, which allows them to be used not only for communication, but also to perform more complex tasks with their help, to process a larger flow of information, to use various mobile applications in learning under mixed learning conditions. The article is devoted to one of the most relevant topics of modern education – the new Ukrainian school and the features of using mobile applications in elementary school lessons. In particular, the essence of such concepts as distance learning and the development of modern technologies is developing. The main features of the new Ukrainian school are highlighted and recommendations are provided for the use of mobile applications in technology lessons in elementary school in the conditions of distance learning.

Key words: *new Ukrainian school, technologies, face-to-face education, distance education, mobile phone, mobile education.*

Масове використання дистанційної форми навчання розпочалося у навчальних закладах України в період карантину 2019 року, однак

найбільшого розповсюдження отримало с початком війни у лютому 2021 року. Якщо раніше замовниками дистанційного навчання виступали, зазвичай, зрілі громадяни, зайняті виконанням професійних обов'язків, то в період з початку війни у 2021 році та учасниками дистанційного навчання стали учні шкіл, професійних училищ, студенти коледжів та університетів. У дистанційній формі почали проводити наради, засідання, конференції, організувати захист дисертацій. Дистанційне спілкування з використанням відео зв'язку почало використовуватися не лише для навчання, але й для управління підприємствами та організаціями, міністерствами і, навіть, країнами. Всі переконалися, наскільки важливою є дистанційна форма спілкування та навчання в умовах особливих критичних ситуацій. Очевидним є те, що навички та методики дистанційного навчання залишаться затребуваними в школі, адже більшість шкіл України продовжують дистанційне навчання. У наш час телефони, смартфони та планшетні комп'ютери перестали бути новинкою для учнів навіть початкової школи. У міру технічного прогресу цифрові пристрої одержують все нові та більш потужні процесори, що дозволяє використовувати їх не лише для зв'язку, а виконувати за їх допомогою більш складні завдання, обробляти більший потік інформації, використовувати різні мобільні додатки у навчанні при умовах змішаного навчання. Стаття присвячена однією з найбільш актуальних тем сучасної освіти – новій українській школі та особливостям використання мобільних додатків на уроках технології у початковій школі в умовах дистанційного навчання.

Ключові слова: *нова українська школа, технології, очне навчання, дистанційне навчання, мобільний телефон, мобільне навчання.*

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Highlighting previously unresolved parts of the overall problem. Education based on the new ukrainian school (NUS) model has been implemented in all schools of Ukraine. One of the key components of new ukrainian school is the modern educational environment, which involves a review of changes in the physical, spatial and subject environment, programs and teaching aids. Each elementary school teacher will not only work in a bright and cozy classroom, but will also have a technically equipped

computerized place. The situation that is caused by war in Ukraine and the great changes in the system of education requires additional analyses of the recommendations on the use of mobile applications in technology lessons in elementary school in the conditions of distance learning that is actual nowadays.

Analysis of recent research and publications. The directions of using mobile devices in education have been studied by many domestic and foreign scientists. Thus, R. S. Gurevich, N. V. Kononets,

V. M. Kosyk, O. O. Nalivaiko, N. V. Rashevskaya, I. O. Teplitskyi, S. I. Tereshchuk, G. V. Tkachuk, T. A. Khomych, N. A. Chornous, S. V. Shokalyuk and others studied the place and role of mobile educational technologies in institutions of higher education, positive and negative aspects of mobile learning, components of mobile learning as an alternative to distance learning. S. O. Semerikov, M. I. Stryuk and N. V. Moiseyenko conducted a historical and technological review of mobile learning technologies, determined the characteristics of forms and technologies. Yu. V. Trius, V. M. Franchuk, N. P. Franchuk singled out the organizational aspects of the use of mobile learning in the system of professional training of future specialists. The use of mobile devices in secondary education institutions from technological and didactic aspects was considered by K. P. Osadcha, A. Z. Babich (in computer science classes), V. V. Bilous, N. O. Mamzenko, G. V. Skrypka (in classes history and geography), I. M. Bilyai (in mathematics lessons), S. S. Pudova, O. V. Slobodianiuk, S. I. Tereshchuk (in physics lessons), etc. However, the study of the use of mobile applications in technology lessons in elementary school in the conditions of distance learning.

The aim of the article. The aim of the article is to come up with the specific features of the new ukrainian school and to analyze the recommendations on the use of mobile applications in technology lessons in elementary school in the conditions of distance learning.

Presenting main material. Our institution has already created classrooms in which the conditions for children's education are aimed at the development of the child and his motivation to study. There are mobile workstations that can be easily transformed for group, team and project work. A separate discovery zone for those things that ignite the child's imagination. It contains board games, fun books and magazines. Some students prefer to work alone to complete assignments, read, write, count, or reflect. A spare table and chairs can be used for a quiet area. Also, the classrooms are equipped with modern technical means: a projector, a plasma TV, which help to improve the quality of education and to adapt to the environment faster. One of the key components of the New Ukrainian School concept is partnership pedagogy, which is based on close cooperation, communication, and interaction between students, teachers, and parents.

Parents of students of our school closely cooperate with teachers in the following way:

- participate in constant dialogue, including during morning meetings, trainings, parent meetings, round tables, conferences, etc.;
- organize additional communication (“parental meetings”, exchange of books and games);
- they help in the organization of educational activities, conducting classroom and extracurricular

activities, are participants in contests and competitions.

Joining the efforts of teachers and parents contributes to the personal growth of the child and facilitates the assimilation of the material. That is why the teaching staff of the educational institution tries to make school and home one whole for the child [1, p.113-119]. A special feature of new ukrainian school is the organization of such an educational environment that promotes the free development of a child's creative personality. For this purpose, the spatial and subject environment, programs and teaching tools have changed in our school, the share of project, team, and group activities in the pedagogical process has increased.

In turn, not only students, but also parents and teachers felt the changes in the educational process. Teachers have been quite responsible for the changes and standards of the new ukrainian school methodology, they are actively implementing them with the children. The preparation for work according to the new ukrainian school program of pedagogues – teachers of primary classes made it possible to fully ensure the personnel component of the introduction of the New Ukrainian School into the educational space. The teacher gained freedom of action – independently chooses educational materials, improvises and experiments.

According to the program of the New Ukrainian School, teachers teach children to read with understanding, to express their own opinion orally and in writing, to think critically and systematically, to manage emotions constructively, to assess risks, to cooperate with other people. School becomes closer to real life. Students will be able to practically apply the acquired knowledge in everyday life [2, p.7-16].

The main condition for ensuring continuity in education and training is the orientation of the pedagogical process of the children's preschool educational institution and school to the comprehensive development of the child's personality. In view of this, it is necessary to connect the programs, methods and forms of education in kindergarten and primary school, therefore the teachers of our school cooperate with children's preschool institution No. 322 of our neighborhood. They share experience and pedagogical developments, prepare excursions for preschoolers to school and conduct activities involving schoolchildren in kindergartens. It is important to mention that the new program is radically different from the traditional one. It was planned to create a “motivating” space for learning. Also, according to new ukrainien school, in the learning process, children will use tablets, multimedia boards, play intellectual and economic games. There were also plans to introduce electronic diaries to monitor performance and practice of online education.

The principle of conducting lessons will also change. According to the innovations, classes will

be practical cases, and the emphasis will shift from rote learning to the ability to think critically. Lessons must be conducted in Ukrainian and English, and in high school students (together with their parents) will be able to choose subjects. It is worth noting the nuances with homework. At new ukrainien schoo., they are not provided at all for students of the first grade. They begin to set d / z from the second grade, selecting the amount of tasks so that children spend no more than 45 minutes, 3rd graders – 70 minutes, and fourth graders – up to 90 minutes.

Assessment of knowledge begins only with the 3rd grade, and instead of report cards, junior school students are issued with a Certificate of Achievement. It will describe the qualities (current, acquired and changes) of each student according to 51 indicators. Even the teachers of NUS will stop announcing grades in the classroom. Only students and their parents will be able to find out the success rate and current score individually. You can find out more about the differences from the teachers themselves by going to Buki's blog.

Another difference of NUS is that interviews and competitions for admission to this or that school are canceled. The Ministry of Education hopes that in this way they will be able to guarantee equal rights for all children, regardless of the social status of the family. Analyzing the future of education, it is important to mention that the modern realities are such that more than 70% of graduates do not know what profession to choose and often enter universities at random or based on the advice of relatives and the possibilities of the family budget. Moreover, many students and parents (up to 80%) are convinced that at school children do not receive knowledge that would be useful to them in life [3, p.19-23].

The initiators of the reform decided to revive the value of the educational process through the introduction of a new program. It is planned that the transition to NUSH will help create a school of a new generation, where children will go with pleasure, where they will want to gain knowledge. According to the reform, students will be taught useful skills that will help reveal the child's potential and talents, which will facilitate the process of choosing a profession in the future. At the same time, due to the choice of priority subjects, students will be able to focus on obtaining knowledge in those areas that they will need in life. In addition, from 2019, individual disciplines in schools must be conducted by specialists of specialized organizations to ensure that children have the opportunity to learn practical skills [4, p.41-44].

Among the innovations we also note:

–creating a voucher with a certain amount. It will be equivalent to the costs that the state allocates for each student on average. Children and parents will decide how to distribute funds;

–duration of study is 12 years. However, this innovation is planned to be implemented no earlier than 2029, when new standards, trained teachers and textbooks will appear. NUS will allow students to switch from a 4-year bachelor's degree to a simplified 3-year system in most modern specialties;

–all children will be able to attend school, including and with special needs. At NUS, they will be able to study together with other students, but an individual development program will be developed for them, including correctional and rehabilitation classes, psychological and pedagogical support will be provided;

–cancellation of school uniform;

–students will be able to use various methods of individual study (externship, family or under the patronage of a teacher).

In the conditions of war, it can be difficult to organize mixed training, however, there are other models of its organization, which mainly concern training methods. All models of the distribution of the learning time of the lesson into synchronous and asynchronous modes are models of mixed learning. One of the effective methods is the “Flipped Class”, which stimulates students to be active participants in the educational process. Activity-based learning methods, step-by-step instructions for independent work can be used to teach students in asynchronous mode.

In other words, new ukrainian school will be interesting, useful and convenient for everyone, it will transform and improve the quality of education, which will allow to raise a more creative and motivated generation in the future.

1. Morning circles. The morning circle or meeting is one of the main features of new ukrainian school. This is the introductory part of the school day. Children, together with the teacher, sit on the mat to discuss the plan for the day, recall the past or talk about any other topic. It is important that the teacher sits down with the children, because his eyes should be at the same level as the children's. Such meetings bring children together and remove the fear of expressing themselves.

2. Intergation of subjects. Integration is the unification of different educational fields into one subject. In the elementary grades of the National University of Higher Education, there is the subject “I explore the world”, which includes the following fields of knowledge: natural sciences, language and literature, mathematics (both partially), social and health care, civics and history, informatics. Integration is necessary because young children do not divide the world separately, for example, into physics or chemistry. They perceive him as a whole, and therefore it is worth talking about him at school in this way. In addition, humanity is now faced with many global problems that cannot be solved with the help of a single field of knowledge. From an early age, children are taught to see intersubjective connections [5, p.142-148.].

3. Children do a lot of practical things. New ukrainien school is not about sitting at a desk with your hand on your hand. This is movement, educational games, experiments and a lot of creativity. Freezing ice, learning to pay for travel in public transport and shopping in a supermarket in order to be able to count money and be thrifty – this is how students learn at new ukrainien school.

4. Children are not graded. Instead, there is formative assessment. There are no grades in first or second grades. That is, students are not given the usual points or emoticons for correctly or incorrectly completed tasks (yes, an emoticon is also a grade). Instead, there is formative assessment – when students are not compared with each other or with a certain standard. The only thing that matters is how the student's results have changed compared to his/her results in the past. The absence of a score does not mean the absence of an assessment. The teacher monitors whether the students succeed in everything and what they need help with. For encouragement, the teacher does not use the word “wrong”, but says: “Well done, let's think about how we can improve your work”, “What would you change here?” etc. That is, the student must try to find and correct the error himself and feel like a winner.

5. Face to face meetings with parents which are issued with a certificate of achievement. Despite the absence of grades, parents should understand what is happening with their child's education. To do this, the teacher regularly meets with them to emphasize the student's strengths and advise how to improve what is not working. It is ideal if such meetings take place with the participation of the child – after all, there is nothing about him without him. Certificates of achievement are also provided at new ukrainian school. They are issued twice – after the first quarter (to fix the starting point) and at the end of the school year. It determines to what extent the child has mastered this or that competence or skill. Moreover, they take into account not only the academic side (whether the child can read and write), but also soft skills (for example, whether he does not conflict, whether he knows how to cooperate in a team and whether he shows initiative during the lesson).

6. Children's things are hanging on the walls. This is about changing the educational environment. We deliberately do not emphasize the new desks, because one may get the impression that, when talking about new ukrainian school, they mean only them. Although they are not the main thing. Changing the educational environment is also about whether, instead of the usual classroom corner, children's works, interesting facts about the world or about the students themselves hang on the walls. This is what motivates the most – the pride of having my picture hanging on the wall next to the pictures of my classmates. Based on the analyses of the modern

technologies, it is important to mention that the main means of implementing mobile learning in classes is a smartphone. This digital device has gathered all the latest technological advances: it has a processor, a touch screen and a powerful operating system that allows us to perform almost all the actions we need while working at a computer. With the help of a smartphone, you can work with the Internet, e-mail, listen to audio recordings, view videos and photos, open and create multimedia files, work with many business, educational and gaming applications. In other words, a smartphone is an analogue of a computer, but on a much smaller scale. But there are other devices that can be used in lessons: communicator (pocket computers), laptops, netbooks, tablet PCs and other mobile gadgets. Their main feature is small size, light weight and excellent functionality [6, p. 293-298].

In the period of war, it is very important to pay attention on the project, search, and research tasks will help the teacher to ensure a variety of cognitive activities and interest students. As a rule, the main part of such tasks is performed by students in asynchronous mode.

One of the types of organization of such training can be the systematic use of the “Flipped Class” technology, which involves providing students with tasks to familiarize them with new material before the teacher explains it in class. This can be watching a video, analyzing practical problem situations, processing the educational text and transforming it into another form – a table, infographics, charts, tests, etc. In this case, the role of the teacher and the very format of the lesson changes. The teacher creates conditions in order to increase the activity of students in the lesson. The teacher and the children in class can discuss the questions formulated by the students after watching the video, create a mental map together, model, discuss, etc. At the same time, it is worth mastering new material only after discussing completed tasks, feedback from the teacher or mutual evaluation of completed tasks. The proposed model is a variant of mixed learning, since students study half of the material independently in a distance format.

Our practical experience has confirmed that schoolchildren adapt to mobile technologies quite easily. It allows you to work with any component of e-learning that can be used with the help of mobile devices: information portals, e-books, mobile dictionaries and translators, testing systems, multimedia tools, software applications, means of information exchange, communication, etc. During an experimental study on the introduction of blended learning in computer science classes, we used mobile applications during preparation for the lesson, during the lesson and after the lesson as additional creative tasks. Thus, when conducting lessons using the “Flip Classroom” technology, students were offered

to familiarize themselves with a certain part of the theoretical material before the lesson. As educational material, we used existing video lectures from educational sites, textbook texts in electronic format, and self-developed flash presentations for lessons.

It is necessary to mention, that there are some advantages of the distance education, among which can be mentioned a sense of place, scale and the presence [7, p.28-37]. It should be noted that a sufficient number of ready-made information resources can be found in the web space. For example, on the websites "Teaching informatics at school", "Educational resource A. Bukach", YouTube channels "HelpInformatik.Net.Ua", "Lazarus lessons", "Task Informatics » and others have collected a lot of material that can be used in computer science lessons from the 2nd to the 11th grade as the main or additional material. The mobile application "School textbooks" (Google Play service) allows you to download electronic versions of textbooks on informatics and other subjects both comprehensively (useful for the teacher) and separately by class (useful for students) to your phone for free. However, the teacher must carefully analyze the material posted on the Internet for scientificity, logic, and adaptation to the age characteristics of the students. It should be noted that the video should be selected or developed independently by time – no more than 10 minutes, because after ten minutes of viewing the information, the students' attention decreases. In addition, there are other school subjects, so all teachers should follow the rules for homework.

The downloaded video will also be useful during the lesson when performing practical tasks and during independent homework. For each educational video, it is necessary to ask questions, develop interactive tasks, questions to search for clarifying information to focus students' attention on viewing. For example: 1. Based on the video materials, formulate three or four sentences that reveal the main essence of the material, record these sentences using an audio recording on the phone; 2. Based on the video materials, make a diagram, draw it on paper, take a picture and send it to the class group in Telegram [8, p.53-62].

When organizing a "Station Rotation" lesson in individual lessons of our study, one of the stations was called "Mobile". Students, sitting at their desks, during group work performed tasks that were sent to their phones or that they downloaded by scanning a QR code. For example, with the help of a phone, they watched a video without sound, on which an algorithm of a certain type was gradually assembled without demonstrating the finished result. The students had to write down the finished algorithm in a notebook and express their opinion about the results that will be obtained if the algorithm is run on a computer. Students are interested in various tasks that are completed in the LearningApps environment. It

should be noted that LearningApps is a simple, free tool for developing interactive electronic educational materials. The service offers a variety of tasks: quizzes with a choice of answers, crosswords, tasks for dividing into groups, by classes, establishing the correct sequence, and many others. Assignments can be developed and distributed using hyperlinks or a QR code [9, p.16-21].

There are several possible scenarios for returning to full-time training after the end of the quarantine. However, in any case of them, it is necessary to carry out a diagnosis and analysis of students' mastery of the material offered during distance learning teaching. Considering the fact that students study many subjects in basic school, it is extremely important to take to this process is enough time to avoid overload and unnecessary emotional stress. If possible, it is worth applying the activity monitoring method manifestations of mastered competences in addition to or instead of test papers based on the assimilation of theoretical information.

To ensure the implementation of educational programs of the institution if necessary, it is necessary: develop individual study plans; take time for additional consultations; adjust the calendar plans of the following periods for balanced inclusion of material that is forced missed during quarantine; if it is diagnosed that students are on different stages of mastering the material, to further ensure an effective educational process, it is advisable to use the method of mixed learning.

The main task of the information space of the institution is to create safe and comfortable conditions for the exchange of information between the participants of the educational process, storage of individual educational information of the participants of the educational process, joint work of the participants of the educational process.

An important component of the information space of an educational institution in the conditions of distance learning is the information transmission channels that exist in the settlement and access to them by participants in the educational process. As evidenced by the work experience during the distance learning period, the vast majority of participants got access to cable with a speed of 25-100 Mbit/s and mobile 4G Internet.

In such conditions, with the help of the Meet application, we were able to comfortably hold even meetings of pedagogical councils that lasted more than 2 hours and were attended by more than 70 participants. The teaching staff paid a lot of attention to the creation of rules of use and norms of behavior in the information space of the participants of the educational process of the institution. The following were developed, approved at the meetings of the Pedagogical Council and the Council of the complex and practically worked out with all users:

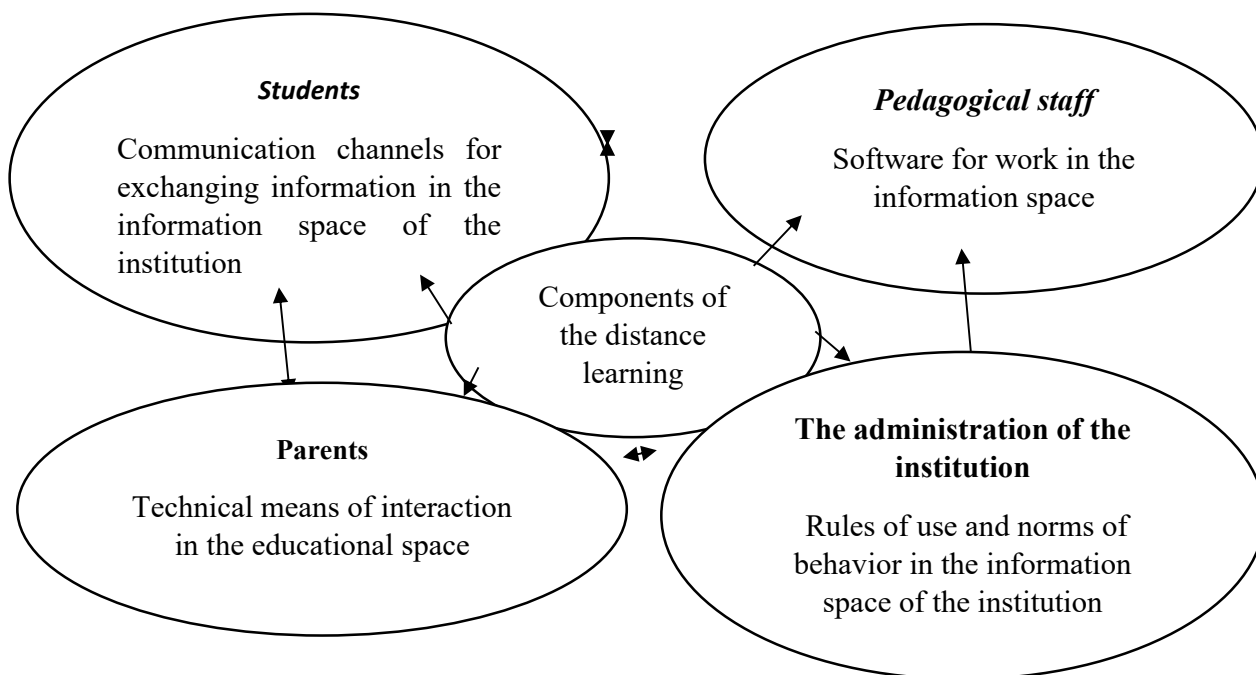


Figure 1. The components of the distance learning

Source: created by author

- instructions for working on the platform with a smartphone;
- instructions for working on the platform with the “Google Calendar” application;
- instructions for working on the platform with the “Meet” application;
- instructions for working with the “Google Drive” application;
- instructions for working with the “Google Classroom” application.

The description of the sources of the information is presented in the table 1.

It is important to analyze the effectiveness of the technologies used during distance learning during the quarantine, in particular, to continue using some of them for blended learning, electronic support of face-to-face classes, etc. For this, it is necessary to define practices and technologies that have confirmed their success, and apply them in the future. For example, technologies for organizing interactive surveys work great in face-to-face lessons, digital ones creative tasks can be used for project tasks approaches, and the practice of formative assessment should become usual, regardless of the form of organization of the educational process [10, p.11-15]. It is most likely that one or another form of blended learning will continue to be used, so the educational institution is worth it to investigate in detail possible technological solutions to ensure a continuous educational process, to organize professional development for teachers, to offer introductory courses or separate classes for students and parents.

Analyzing the recommendations regarding the usage of mobile applications in technology in

elementary school it is necessary to mention the following recommendations:

- educational orientation of the mobile application (the selected mobile application must solve an educational problem, be used for control, increase motivation and eliminate unnecessary distraction);
- availability of instructions or video tutorials on the use of this mobile phone application;
- clear interface (presence of standardized panels, buttons and working window, as well as clear rules for interacting with them);
- availability of an update (availability of continued product support by the manufacturer and frequency of its updating and improvement);
- availability of reverse support (possibility of sending requests to the manufacturer and receiving answers regarding the operation of the program, suggestions and wishes).

Among the special recommendations it is necessary to highlight:

- professional orientation (the category of the mobile application should be in within the professional field of training of future specialists or relatives industries);
- the quality of the presented developments (the development in the mobile application must have a certain level of detail that is sufficient to create a complete image, technological solution or conceptual proposal);
- availability of professional tools (availability of at least two tools to create an object, which must be different from each other, have parametric configuration

Table 1

The description of the source of information

The source of information	The description of the source
Gmail	e-mail is a core service of the G Suite for Education cloud platform. With the help of an e-mail address, registration is carried out on many network resources and services, as well as the exchange of data of any content.
Google Диск	cloud service included in the G Suite package. Google Drive combines the functions of a storage of digital materials and a set of tools and services for working with them, namely applications: for working with documents in a text editor (Google Docs), processing and analyzing data (Google Sheets), conducting surveys and testing (Google Forms), creating images (Google Drawings) and presentations (Google Presentations), creating your own maps (Google Maps), designing web pages (Google Sites). In addition to the mentioned basic services, applications created by Google's partners can be connected to the Drive
Google Calendar	is a cloud service for organizing time and planning events or tasks. The service is part of the G Suite cloud package. It ensures the implementation of planning tasks at the corporate level. In addition, the service is available to anyone who has a personal Google account.
Google Classroom	there is a cloud service to support blended learning. Its use makes it possible to simplify the processes of creating, publishing educational resources and tasks, as well as evaluating the level of educational achievements of students.
Google Meet	a cloud service that supports up to 250 participants for G Suite users, for creating video conferences, which makes it possible to conduct remote classes with students in synchronous mode.

Source: created by author

options, as well as recall existing ones material prototypes);

- the possibility of saving in various professional formats (the possibility saving in various popular raster, vector and 3D graphics formats);

- the availability of libraries (the presence of an additional database of stored tools, parameters of their setting, individual objects or their constituent elements and etc., which allows you to speed up the development process and bring it to automation);

- availability of simulation (availability of the possibility of applying object imitation or its characteristics, reproduction of certain properties or behavior corresponding physical or abstract system).

Conclusion. Long-term distance learning should take place using a special online platform. In order for children and teachers to be comfortable and understandable, it is important that such a platform is uniform for the entire school. It can be, for example, Google Classroom, Moodle, or a platform developed to the order of an educational institution. In turn, it is important for teachers to provide feedback to students and establish an evaluation system through clear criteria, deadlines for tasks, and the introduction of deadlines. Given that distance learning as an educational technology requires a systematic approach, schools should start developing full-fledged distance courses in basic subjects for primary school students. The advantage of full-fledged courses over sets of educational materials is their structure, step-by-step support for the student's independent work, and the availability of systematic feedback. Such courses can be used during mixed learning, forced distance learning, for the systematic application of the Flipped

Class learning technology. The availability of such courses will also make it possible to open classes with a distance form of education, the relevance of which is increasing.

As a result of the conducted experiment, it was discovered what to use mobile technologies in lessons in conditions of mixed learning are possible and effective. They are especially useful when preparing for a lesson, in project activities, in team work work during the performance of creative, practical-oriented tasks. Mobile devices significantly increase the motivation of schoolchildren due to their interest and capabilities to use non-standard means in lessons, allowing to study information in a form convenient for them and to independently manage their studies. They contribute to this modern mobile services, because it is possible to use them to communicate between teacher and students; there is fast feedback, visualization of information, differentiation, etc personalization when performing tasks, etc. Of course, certain ones arise in the process of implementation problems of a technical and technological nature, but the creative approach is optimistic the mood of the teacher and students help to overcome some inconveniences, to find a way out unforeseen situations.

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