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To the question of choosing the best platform for distance learning

The article is devoted to the analysis of the advantages and disadvantages of the platforms used in the distance education system of the Republic of Kazakhstan. The most popular distance learning platforms used by teachers and students in schools, colleges and universities, namely such platforms as Zoom, WebEx and Microsoft Teams have been examined. Having analyzed the features of these platforms described in IT-literature, the author came to the conclusion that the most functional platform for conducting online-classes was the Microsoft Teams platform, which was also confirmed by the results of a survey among Karaganda students and school-children. The survey involved 100 people aged 14 to 27 years, most of whom were university students (70 %). At the time of the survey, 85 % of respondents were dissatisfied with the distance learning process, mainly due to the poor Internet connection, as well as the low quality of the educational materials demonstrated by teachers. According to the survey results, the platform Zoom turned out to be the most used platform for distance learning chosen as the leading educational platform by teachers, while the students themselves preferred the Microsoft Teams platform as the most convenient one for online classes due to easy sign-in, the opportunity to save learning materials and other useful services of the platform.

Key words: covid-19 pandemic, form of education, distance learning, distance learning platforms, the latest technologies, wireless communication, videoconference, educational material.

Introduction

Nowadays, due to the presence of the Coronavirus pandemic all over the world most students and school-children have to study at home distantly via a computer or other gadgets using different platforms, such as WebEx, Microsoft Teams and Zoom. In this connection, the study aimed at determining the best platform for distance learning is relevant and timely. The obtained findings would have implications not only on teaching and learning practice, but also on choosing the best ways of organizing educational process in a distant format.

Literature Review

The choice of online distance education platforms is influenced by a number of factors. For instance, in the literature, B. Chokri highlights the familiarity with the online distance platform as important for student's choice of distance education [1]. On the other hand, W.T. Chinyamurindi, B. Mahembe, T. Chimucheka and E. Rungani [2] echoed by A. Li, A. Islam and X. Gu [3] postulate that the extent to which an online platform ensures interaction among online students was seen as useful and influences the use of online learning platforms by students. According to L. Liu if the online platform addresses the learning needs of students it is likely to be chosen or prioritized by students on distance education [4]. In support of this assertion, M.A. Almajah, A. Al-Khasawneh and A. Al-Thunibat summarize factors influencing the choice of online platforms for distance education as platform efficiency, usefulness, easy to use, reliability and content design [5]. On the other hand, students with disability or special needs choose the online distance platform based how well they are supportive to addressing their special educational needs [6].

Experimental

The main research method used in the study was a cross-sectional survey through a questionnaire, which was conducted among people aged from 14 to 27 years — those who have ever used one or another platform for distance learning. These people were either in school, college or university at the pandemic time. In total, the respondents had to answer 9 closed and open-ended questions voluntarily and anonymously.

The results of the survey were processed using mathematical and statistical methods as it ensured the reliability of findings.

To determine advantages and disadvantages of the mentioned above platforms, the following methods were also used: analyzing, systematizing, generalizing information about practical usage of the tested platforms with the aim to identify the best platform for distance learning.

Results and Discussion

The three platforms — Zoom, WebEx and Microsoft Teams — were studied in the research with the aim of determining positive and negative aspects of their usage.

Zoom is a wireless communication service for organizing video conferencing, webinars, group chats. The platform allows communication via video and / or audio communication. It can be installed on a computer, tablet, or smartphone. Nowadays, zoom is used everywhere — in financial institutions, IT companies, healthcare authorities, educational institutions — wherever you need to connect with remote employees, clients, listeners.

Zoom conferences are of two types:

- instant conferences, which are suitable when you need to hold a meeting at work, discuss a project with performers or solve other urgent matters. The organizer enters the conference mode, sends invitations to the participants, and they can use the link to access the event;
- planned conferences, which are suitable for online lessons, workshops, conferences. In this case, the organizer sets the date and time of the meeting, specifies the topic, presets the video and audio, sends invitations to the participants by mail or in Zoom [7].

The advantages of the Zoom platform. First of all, screen sharing can be paused. In addition, you cannot share the entire screen, but only individual applications, for example, enable a browser demonstration. In the settings, you can give all participants the opportunity to share screens or turn on the restriction so that only the organizer can do this. Zoom has a built-in interactive whiteboard that can be shown to all participants of the video conference. This function is actively used by teachers during lessons. You can record a video conference and pause it at the right time. Then this video can be sent to colleagues or students who were late for the video meeting or could not attend it.

The disadvantages of the Zoom platform. Some users call the increase in popularity of the service a big disadvantage, as it can lead to malfunctions. Many users, including teachers, complained that before working with Zoom, you need to spend time getting to know the application (complex interface). The platform is conditional. For example, a conference cannot last more than 24 hours. Other restrictions depend on the selected tariff plan.

Cisco WebEx is the best solution for the problems connected to conferencing, meeting, and distant teamwork. You can conduct meetings online using a browser, desktop and mobile applications, as well as specialized Cisco applications. It works on the principle of Skype or Viber, only the emphasis is not on the communication of two people, but on several participants at once. Video communication is supported. The main purpose of WebEx is working-level conferences, no matter where the employee is, it is important that he has a PC or a phone with fast Internet access and can take part in a web conference [8].

The advantages of the WebEx platform. The number of participants might be up to 100 people. There is everything for beginners, plus the opportunity to appoint alternative organizers and schedule appointments for other participants.

The disadvantages of the WebEx platform. First of all, high Internet speed is required for the effective use of the platform. Moreover, when there are a lot of people at the conference, the conference lags.

Microsoft Teams is a corporate platform that includes chat, meetings, notes, and attachments. It was designed to compete with Slack. Microsoft Teams is the part of the Office programs, so if you have it installed, then somewhere you can notice the name of this program [9].

The advantages of the Microsoft Teams platform. There is a place to store files for work. The platform is supplied with the detailed manual in Russian. You can quite quickly organize an online conference. Video conferencing is available in other apps as well, but in Microsoft Teams it is easy to schedule them through the calendar, set up a notification within the platform or by mail, and quickly connect a student to a lesson or a parent to a meeting, you just need to mention their name with @. This platform is convenient to distribute tasks. You can also conduct a test, work with a digital board, share information from your screen without leaving the application.

The disadvantages of the Microsoft Teams platform. The platform works with errors. It does not have the easiest functionality. At the moment, the platform has become paid, unlike Zoom and WebEx. Due to the large number of platform functions, it is not immediately possible to understand how it works.

All the advantages and disadvantages of the distance learning platforms are shown in Table 1.

Table 1

Advantages and disadvantages of the platforms

Zoom		Cisco WebEx		Microsoft Teams	
+	-	+	-	+	-
- screen sharing can be paused	- a conference cannot last more than 24 hours	- meeting participants: up to 100 people	- high Internet speed is required for the effective use of the platform	- there is a place to store files for work	- it does not have the easiest functionality
- Zoom has a built-in interactive whiteboard	- you need to spend time getting to know the application (complex interface)	- the ability to appoint alternate organizers	- when there are a lot of people at the conference, the conference lags	- the platform is supplied with the detailed manual in Russian	- at the moment, the platform has become paid, unlike Zoom and WebEx
- you can give all participants the opportunity to share screens or turn on the restriction	- many users use this platform, this leads to poor quality of work	- the ability to schedule appointments for other participants		- you can quite quickly organize an online conference	- the platform works with errors
- you can record a video conference and pause it at the right time				- video conferencing in Microsoft Teams is available in other apps, but it is easy to schedule them through the calendar, set up a notification within the platform or by mail, and quickly connect a student to a lesson or a parent to a meeting, you just need to mention their name with @	
				- you can also conduct a test, work with a digital board, share information from your screen without leaving the application	

The second part of our research was devoted to the survey. People aged from 14 to 27 years took part in the study. Most of them (37,3 %) were 18-21 years old (Fig. 1).

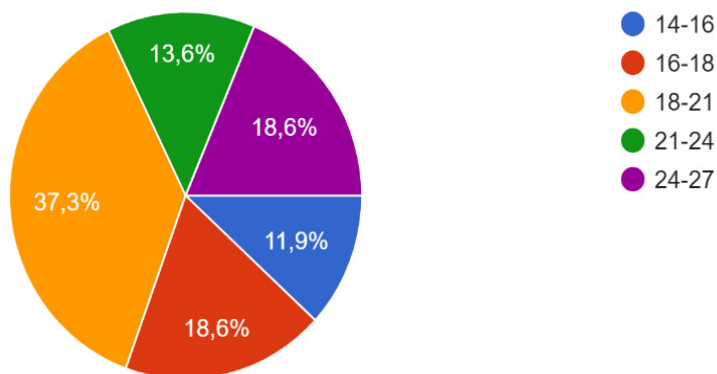


Figure 1. Age distribution

Most of the respondents were university students — 70 %. Schoolchildren and college students made the same number (over 15 % for each category).

85 % of the survey participants were studying online being unsatisfied with distance learning. Among the reasons for dissatisfaction the following ones were mentioned: 29 % of respondents could not acquire the necessary material because of the low Internet connection, 20 % emphasized that the demonstration prepared by the teacher was of poor quality, 19 % were thrown out of the platform a lot of times during classes, 17 % mentioned disappearing picture and sound, 8 % could not launch the offered platform at all (Fig. 2).

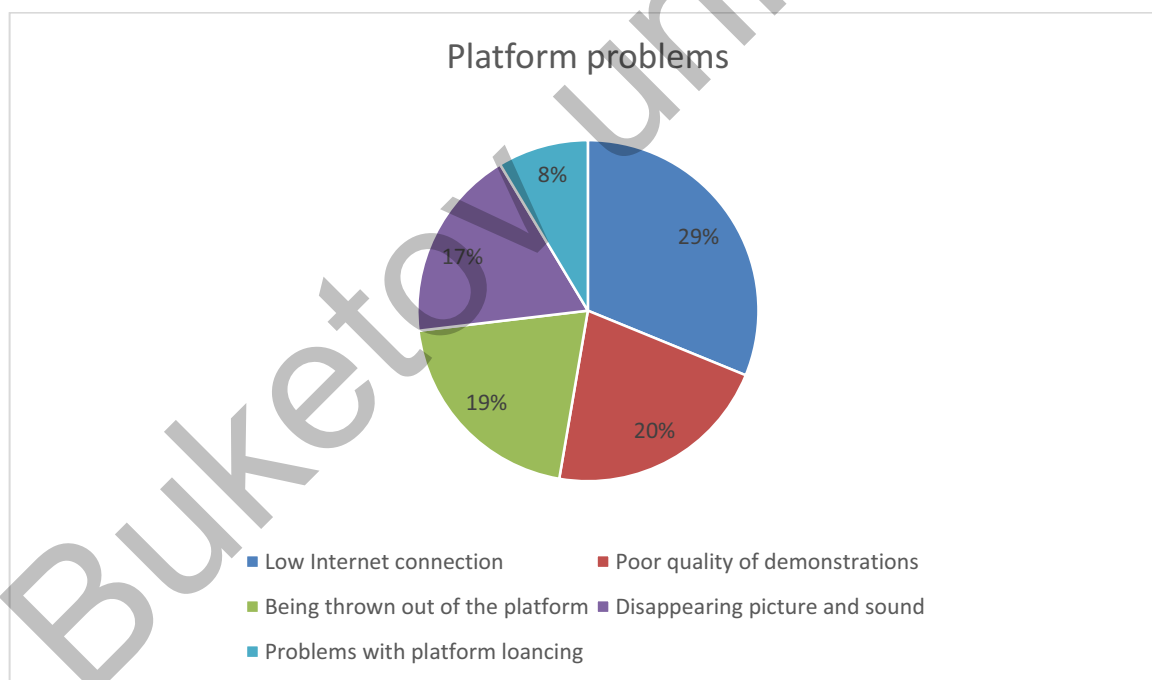


Figure 2. Platform problems

According to the result of the survey, the most used platform was Zoom, the last place belonged to Microsoft Teams (Fig. 3).

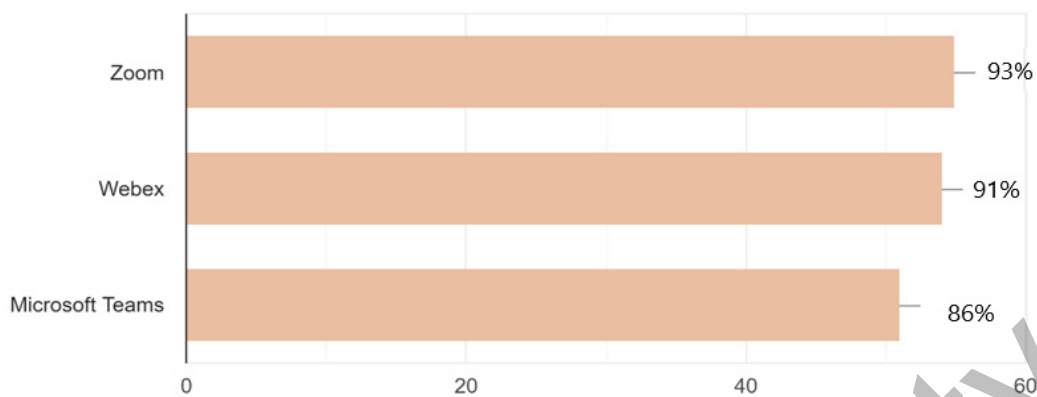


Figure 3. The platforms used by the respondents

Knowing that the platform to be used is usually offered by a teacher, we asked about respondents' preferences for the platform. The first place was taken by the Microsoft Teams platform (Fig. 4).

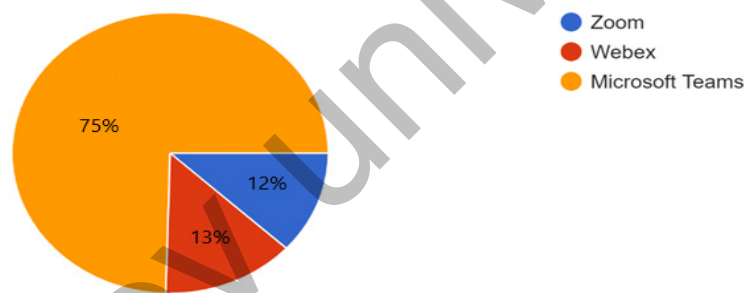


Figure 4. Preferences for platforms

Most of the respondents considered it as a plus of Microsoft Teams that this platform had tools for learning, the entrance to this platform was easy, and materials for learning were saved (Fig. 5, multiple choice was possible).

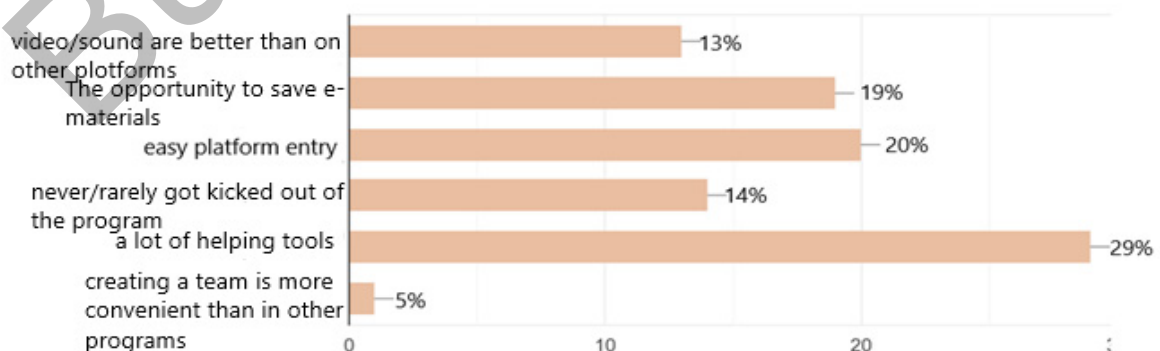


Figure 5. Advantages of Microsoft Teams

Conclusions

Having analyzed advantages and disadvantages of the 3 platforms described in IT-literature, we concluded that the best platform for training, organizing conferences and meetings was Microsoft Teams. It was confirmed by the results of the questionnaire — the Microsoft Teams platform was chosen by the respondents as the best and most comfortable one due to easy entrance to the platform, the opportunity for storing educational materials, the plenty of assistant tools for the teacher and students.

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В.А. Бурмистрова

Қашықтықтан оқыту үшін ең жақсы платформаны таңдау туралы

Мақалада еліміздегі қашықтықтан білім беру жүйесінде қолданылатын платформалардың артықшылықтары мен кемшіліктерін талдауға арналған. Оқытушылар, сондай-ақ мектептер, колледждер мен университеттердің білім алушылары қолданатын ең үздік қашықтықтан оқыту платформалары қарастырылды, атап айтқанда: Zoom, WebEx және Microsoft Teams. IT-әдебиеттерде сипатталған қашықтықтан оқытуға арналған платформалардың ерекшеліктерін талдай отырып, мақала авторы онлайн сабақтарды өткізу үшін ең функционалды Microsoft Teams платформасы болып табылады деген қорытындыға келді, бұл Қарағанды қаласының студенттері мен білім алушылары арасындағы сауалнама нәтижелерінің негізінде расталды. Сауалнамаға 14-27 жас аралығындағы 100 адам қатысты, олардың көпшілігі жоо студенттері болды (70 %). Сауалнама кезінде респонденттердің 85 %-ы қашықтықтан оқыту процесіне қанағаттанбады, себебі интернетке қосылудың нашарлығына, сондай-ақ оқытушы көрсеткен оқу материалдарының сапасының төмендігіне байланысты. Сауалнама нәтижелері бойынша қашықтықтан оқыту үшін оқытушылар ең көп пайдаланылатын Zoom платформасын негізгі платформа ретінде таңдады, ал студенттердің өздері Microsoft Teams платформасына кіру оңай, оқу материалдарын сақтау мүмкіндігі және платформаның басқа да пайдалы қызметтері арқасында онлайн режимінде сабақ өткізу үшін ең ыңғайлы деп санайды.

Кілт сөздер: ковидтік пандемия, оқыту формасы, қашықтықтан оқыту, қашықтықтан оқыту платформалары, жаңа технологиялар, сымсыз байланыс, бейне конференция, оқу материалы.

К вопросу о выборе лучшей платформы для дистанционного обучения

Статья посвящена анализу преимуществ и недостатков платформ, используемых в системе дистанционного образования Республики Казахстан. Были рассмотрены наиболее популярные платформы для дистанционного обучения, используемые преподавателями, а также обучающимися школ, колледжей и университетов, а именно: *Zoom*, *WebEx* и *Microsoft Teams*. Проанализировав особенности данных платформ, описанные в IT-литературе, автор статьи приходит к выводу, что наиболее функциональной для проведения онлайн занятий является платформа *Microsoft Teams*, что также было подтверждено результатами опроса среди студентов и обучающихся г. Караганды. В опросе приняло участие 100 человек в возрасте от 14 до 27 лет, большинство из которых являлись студентами вузов (70 %). На момент опроса 85 % респондентов были недовольны процессом дистанционного обучения, главным образом, из-за плохого Интернет-соединения, а также низкого качества демонстрируемых преподавателем учебных материалов. Согласно результатам опроса, наиболее используемой платформой для дистанционного обучения явилась платформа *Zoom*, выбранная в качестве основной преподавателем, в то время как сами обучающиеся отдавали свое предпочтение платформе *Microsoft Teams* как наиболее удобной для проведения занятий онлайн благодаря легкому входу, возможности сохранения учебных материалов и другим полезным сервисам платформы.

Ключевые слова: ковидная пандемия, форма обучения, дистанционное обучение, платформы дистанционного обучения, новейшие технологии, беспроводная коммуникация, видеоконференция, учебный материал.

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