

# Improving Communication Processes between Teachers and Students in Higher Education Institutions During the Pandemic

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## Abstract

The article is devoted to determining the features of the scientific and communicative communication between students and teachers in the context of distance learning during the Covid-19 pandemic. The article aims at determining the benefits of using online educational platforms for scientific and communicative interaction between students and teachers. The main scientific research method is a survey conducted within the Kyiv National University of Culture and Arts. During the survey, which was conducted during 2020-2021, the effectiveness of the educational platform "Mentimeter" was investigated. Study results. The online platform "Mentimeter" motivates students to acquire new knowledge and carry out communication processes within this platform. The platform provides students with the educational materials necessary to obtain professional knowledge within the specialty. Teachers use Mentimeter to organize the educational process and ensure two-way communication between students and teachers. During the online survey, information was obtained on the communication effectiveness and the possibility of their application during distance lectures. Students noted that such a platform establishes effective communication between teachers and students under quarantine restrictions. This practice can significantly improve learning efficiency and lead to the potential for improving teaching methodology in the future.

**Keywords:** digital education, distance learning, quality of education, Covid-19, pandemic

## 1. Introduction

Forming any competence depends on the established communication component, which is essential to the educational process. Human communication is a defining feature that allows us to receive professional information and understand its social significance. The Covid-19 pandemic has affected all areas of activity, including education. It negatively affected communication in society. Due to quarantine restrictions, people were forced to reduce communication, which as a result, negatively affected their psychological and mental state. It became a real problem for educators and students, as the transfer of information requires well-established and constant communication processes. That is why higher education institutions faced a serious challenge that required effective solutions (Campbell, 2020; Clase et al., 2020).

Choosing the right solution in the distance learning organization is based on the key tasks of educational process management. It means that communication between the teacher and the student should suffer the least. The well-established interaction in the two-way direction between the student and the teacher allows the transfer of knowledge that corresponds to the chosen specialty and discipline. Proper interaction allows the teacher to control the knowledge quality and the academic level corresponding to the curriculum. It is essential for the formation of prerequisites for quality learning, as well as the creation of a comfortable psychological and pedagogical environment in which the students can learn the information in the best way and unlock their potential (Van Dinther et al., 2011; Mishra et al., 2020; Graham et al., 2013).

Numerous digital entrepreneurs have understood the need for educators for effective technologies that allow them to establish communication processes with a group of people. As a result, the market has seen dozens of different platforms used by different educational institutions during quarantine and even today, when quarantine restrictions

have been partially lifted (Chandna & Salimath, 2018; Casais et al., 2020; Van Noort & Willemsen, 2012). Each educational institution chooses the most appropriate platform for its needs. It means that each higher education institution gains its own experience in forming effective communication mechanisms between teachers and students, between students and teachers. The main task is to ensure that the educational process is formed in a favorable environment that promotes the individual's harmonious development and overcomes society's social and psychological challenges during a pandemic (Bejarano et al., 1997; Pamplona et al., 2001).

The article aims to determine the advantages of online platforms for ensuring communicative and scientific interaction between participants in the educational process.

## 2. Literature Review

The formation of teachers' digital culture is an important field of research and discussion in the scientific literature (Kohnke, 2019; Mayhew, 2019; Bertolini et al., 2019; Smagulova et al., 2020). Numerous studies have focused on using different platforms to ensure two-way communication in higher education. For example, several researchers have highlighted the features of using the online platform Mentimeter.

Different platforms allow higher education institutions and teachers to get a flexible and diverse way of organizing communication through computers and mobile devices. Some of the educational projects provide communication and make the lecture more interesting using various tools, methods, and teaching techniques. Such platforms include Mentimeter, Kahoot, Plickers, GoSoapBox, and Poll Everywhere (Moorhouse & Kohnke, 2020). The main advantage of the Mentimeter platform over the others is that it is more customized for higher education institutions. It aims to provide convenient communication between students and teachers at any time. The platform is available from a computer and a mobile phone, which significantly speeds up communication processes and teacher and student reactions and makes learning more enjoyable.

Numerous researchers have studied how different platforms affect the student's quality of learning (Mayhew et al., 2020). The use of a Mentimeter was investigated by Moorhouse & Kohnke (2020), who showed the practical implementation of the communication problem in teaching a foreign language. Many modern studies have highlighted several advantages of learning within this platform during the 2020-2021 quarantine restrictions (Pichardo et al., 2021; Mohin et al., 2020; Hill, 2020; Gokbulut, 2020).

Mentimeter is a web client that allows students to answer digital questions using a mobile device. The platform has great potential for creating interactive solutions. It significantly improves the learning process and can be used even in inclusive education (Mohin et al., 2020).

To this day, the number of Mentimeter users is thirty million. The program is used by educational institutions worldwide (Mentimeter, 2019). The main additional components of this platform are the ability to conduct quizzes, surveys, and presentations of educational materials. The essential components are lecturing, chatting, etc.

The platform has several options for use: free and paid versions. Free mode allows for communication processes between teachers and students. In addition, basic and professional plans are available for higher education institutions, allowing them to get more tools to improve communication processes between teachers and students. This study focuses on the program's free version, which is used to organize lectures focused on a large audience. The use of tests and presentations allows for supplementing lectures with practical and visual materials, enough to organize a two-hour lecture. However, if the duration of the lecture exceeds two hours, the free version cannot be used, which forms the greatest software weakness (Trees & Jackson, 2007).

However, since most higher education institutions in Ukraine practice lectures lasting up to two hours, the free version is used effectively. It allows for organizing an active discussion and dialogue approach. This approach has much more advantages than passive distance teaching practice. At the same time, teachers practice encouraging students who use this software (Mayhew et al., 2020; Ernawati et al., 2022). As a result, students can solve their problems and get answers to questions promptly.

In order to start using the Mentimeter educational framework, it is necessary to go to the website <https://www.mentimeter.com>. After that, a user account is created. Next, the platform creates a teacher or student record. The teacher can add slides and choose presentations or create questions for specific topics. The range of question formats allows for choosing images, matrices, and other exciting options. Combining different approaches to presenting information allows for consolidating knowledge using visualized effects.

Slides are presented through a special plugin or through the online version, which is downloaded from Office365.

After completing the creation of the lecture lesson, generated QR code can be transferred to the students who will use the software to get acquainted with the lecture material. The Mentimeter software is configured for text printing and voice entry of messages. Students can read questions, coordinate answers, solve scientific problems, and organize presentations (Hill, 2020).

It can be confidently noted that Mentimeter stimulates students' work under quarantine restrictions due to Covid-19. Students can work synchronously or asynchronously with teachers, which creates more effective interaction during educational practice. It means that the student can obtain knowledge at a convenient time (Martyniv et al., 2021). At the same time, instant feedback allows the teacher to see the students present at the lecture and to change the material's content during the teaching for better learning. Students and teachers noted the inclusive potential of this program, as it allows to engage the audience with different abilities and experiences, providing distance education for all. The application also has the potential for development. It is possible to use additional features that better shape the educational process (Pichardo et al., 2021; Hepsiba et al., 2018).

Mentimeter can be used for teaching disciplines of various specialties. Case studies conducted in 2020-2021 showed that educators were actively looking for new ways of interaction between teachers and students that would make the educational process enjoyable and effective during quarantine restrictions (Diachenko et al., 2021) when students and teachers are forced to study and teach from home.

The literature review showed that the highlighted features of using the Mentimeter educational platform do not sufficiently show the potential of using this software. At the same time, in reforming education towards digitalization and gamification, it is important to choose the best online platform that allows teachers to use it in learning processes and for other non-educational purposes.

### 3. Materials and Methods

The research was conducted on the basis of the questionnaire method. The subjects of the survey were students of the Philosophical and Pedagogical Faculty of the Kyiv National University of Culture and Arts. The survey experiment took place in the 2020-2021 academic year. This survey became a kind of experiment, because it was organized on the basis of the Mentimeter platform. Questionnaire questions were formed on the basis of passing educational tests, and the questionnaires included:

1. A multiple-choice test. Such a test allowed to make in the form of visualization.
2. Other questions were applied, which included the student's independent answer. This was done using cloud technologies, where the most important categories and concepts were highlighted, and students formed their own answers.
3. Conciliation survey, when students were offered two options for answers to the question, which involved instantly determining the rate of students' mastery of classes and identifying the most problematic questions that the students did not understand for the teachers.

The conducted survey focused on the educational, evaluation and control goal of understanding the presented material. Such a test survey made it possible to get students' opportunities and show their creative ideas, in particular through simple answers and complex questionnaire questions.

The platform made it possible to conduct surveys in various options. In particular: due to the generation of a QR code, when this code was used, students entered the questionnaires. The second option is to distribute questionnaires through relevant links in various messengers (Viber, WhatsApp, Telegram). Thirdly, the application of the potential of this platform, when students were sent a questionnaire, and the explanation of the response mechanism was laid in the Mentimeter platform. At the same time, this survey experiment was applied directly after the end of the lecture material, which allowed to form information about the assimilation of the material presented by the teacher. The survey methodology provided for conducting a survey of students in two groups - experimental and control. For the first group, such surveys as a test, a survey with answers and an agreement survey were applied. The control group is students who gave answers independently, outside classroom time. The emphasis of the questionnaires was on such surveys as a test and a survey with answers. Survey reconciliations were used much less. Note that all surveys were conducted anonymously.

## 4. Results and Discussion

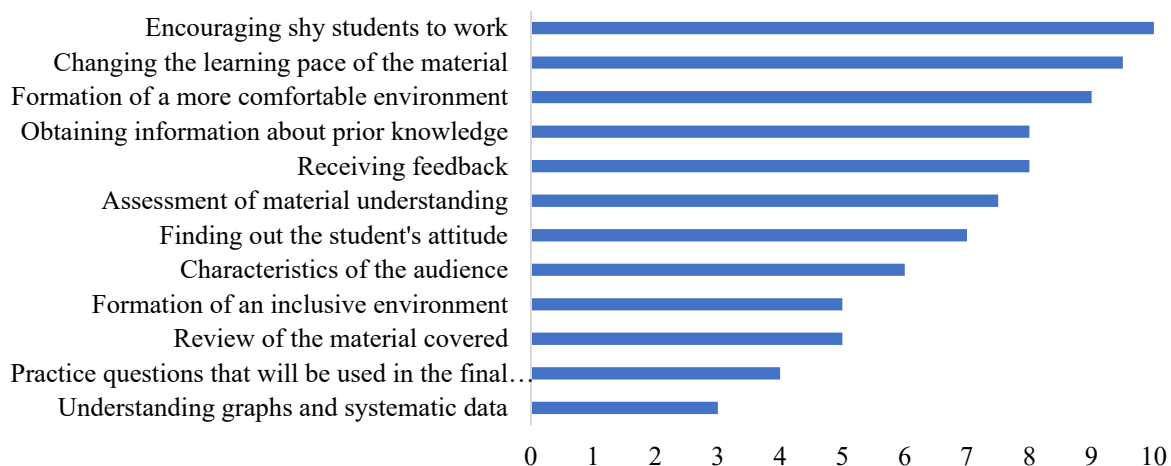
### 4.1 Results

The conducted experiment of this survey noted the main trends in the set directions of the methodology. So that the increase in the level of assimilation of knowledge in the process of conducting classes proves the appropriate level of assimilation of educational material during the study of lectures. At the same time, the learning rate for the experimental group of students was 3.5% higher than for the control group. The increase in attendance clearly dominates in the experimental group than in the control group (85-95% and 75-85%, respectively). Therefore, online surveys at lectures significantly increase the attendance of students at lectures held remotely, and thus confirm the interest of the audience in using such methods of communication and motivate the student not only to attend the discipline, but also to study. The attitude of students and commitment to the use of this platform by both groups of students is quite high. All students of both groups completed the survey, but it took longer in the control group. The only general opinion of the students was noted that the platform is clear and accessible to use.

The role of the digital platform in the system of distance learning was assessed by the results of an online survey conducted by the student parliament of the institute. It was noted that teachers who used testing during lectures before the experiment received a score of 8.6 to 10 points. After the experiment, the score increased from 9.3 to 10 points. At the same time, the control group did not change their opinion about the effectiveness of training and remained at the level of 7.8 points. In addition, this survey made it possible to reveal the rating of teachers regarding the conduct of online classes: by motivation, by interest, by the availability of teaching, by logic. Thus, the Mentimeter platform allows to increase students' assimilation of the presented lecture material, at the same time, expands the reciprocal communication between the student and the teacher.

According to the results of the study, it was found that students of both groups were interested in the use of online platforms in the process of conducting classes in higher education. The answers to the tests indicate that the students of both groups do not differ in terms of communication criteria under distance learning conditions. However, it was found that the control group of students communicates with the teacher in an extended version in terms of time. But by the next class, the communication was worked out and completed. It should be noted that teachers can and should establish communication contact with the student audience when implementing distance education through the Mentimeter platform or similar. Accordingly, the technical tool of communication as a platform for establishing communication between the teacher and students does not play a fundamental role in the learning process.

Students perceived testing in the form of a game quite positively. This conclusion is based on the general results of the survey, because all students passed it. It should be noted that the testing revealed the role of quizzes in the process of conducting classes. At the same time, the activity of students increased significantly. This trend was also noted by the employees of the scientific library of the Kyiv National University of Culture and Arts by visiting the online repository.



**Figure 1.** The Main Reasons for Using Mentimeter in the Classroom

Source: author's research

The conducted survey made it possible to determine the advantages of using the Mentimeter platform (Fig. 1). At the same time, the main advantages are encouraging shy students to work, changing the learning pace of the material and formation of a more comfortable environmental.

The conducted research became a basic factor in the evaluation of communications in the process of distance learning. In general, it can be stated that the teacher-student communication channel through digital platforms at the Kyiv National University of Culture and Arts is at a fairly high level. Students actively use this intellectual tool in the process of conducting classes and during the performance of control and practical tasks, which certify the results of the student parliament and the library staff. The experiment conducted in the "Philosophy" course within the university indicated that it is advisable to use the digital platform for students of other humanities disciplines due to the fact that its use by students enhances the didactic effect, and also allows the student body to perceive the presented lecture materials more deeply and meaningfully. Thus, the university is discussing the results of the experiment and the experience of teachers regarding the future widely planned use of digital platforms in the organization of distance learning.

It should be noted that there is currently no consensus in the pedagogical and scientific circles regarding the effectiveness of the application and use of relevant digital platforms and various applications in the distance learning process. In general, the study indicated that the use of the platform for studying the discipline "Philosophy" provides a powerful opportunity to increase the productivity of learning and the teachers themselves, and this is the basis for improving the provision of educational services in the Ukrainian education system.

#### *4.2 Discussion*

Research (Twyman & Heward, 2018) notes that quick online answers to questions allow the teacher to quickly respond to the level of learning and gather information about the interest of the audience. Such features allow you to maintain the interest of students and shape the overall learning environment. Our research confirms this thesis regarding the benefits of using the Mentimeter online platform. All students note the improvement of communication processes between the teacher and the student, the increase in motivation to study, the possibility of obtaining the opinion of students regarding the availability of lecture material. Teachers, in turn, also note that with this platform the lecture becomes less monotonous, and the material is better absorbed thanks to visualization and the use of presentations with infographics.

In the field of scientific research, this platform provides an impression of the students' opinion about the read lecture materials and the quality of the presentation (Wahab & Tyasari, 2020). Students also have the opportunity to express their opinions regarding practical tasks and the direction of studying certain issues. Anonymity of answers allows you to orient the lecture materials in accordance with the expectations of students and the goals set by employers when hiring young specialists. The above strategies and tactics ensure the effectiveness of the learning process and contribute to the professional development of the academic community (Hill, 2020).

The task of such a study of the influence of the student community on the correction of the content of the lecture material was not done, so we cannot confirm the authors' data. However, it should be noted that the active participation of students in the use of this platform can still ensure the realization of such opportunities. At the same time, we unequivocally state that the platform can be used to assess prior knowledge and determine the expectations of the audience, which will allow the teacher to present more perfectly. With positive reviews of the Mentimeter platform, scientists note its shortcomings (Moorhouse, 2017; Widana et al., 2021), namely the lack of verbal communication among students regarding the expression of their own opinions on certain problems of the educational material. The authors prove that this shortcoming can be compensated by allocating lecture time for discussion of relevant problems by students under the teacher's supervision. Such a disadvantage concerns a certain type of student who has a developed mechanism and an emotional and psychological need for live communication. Therefore, the vast majority of such users express dissatisfaction with the software complex. As for our research, this aspect was not taken into account and was not evaluated. That is, the communication channel was considered in the aspect of symbolic transmission of information. However, we fully accept that teachers must take these aspects into account, therefore, in the process of conducting classes, they will combine various methods, and also not focus exclusively on the exclusive priority of using such digital platforms.

Our research revealed such a significant factor in the communication relationship "student - teacher" as anonymity. Anonymity provides a communication link with a very high efficiency in adapting and optimizing the lecture material when bringing it to the minds of students.

## 5. Conclusion

The study results showed that digital technologies and the Mentimeter platform significantly increase students' interest in the course material. Teachers use the platform to work with students in lecture classes for educational purposes. It allows teachers to get feedback from students and identify lecture materials' weaknesses, teaching methods, and methodologies.

Online surveys, which allow quickly collecting students' attitudes to the information provided, show a high level of communication between the teacher and students, positively affecting the quality of knowledge. Students positively note the communicative component of distance education using the Mentimeter program, which is confirmed by an anonymous survey called "Teacher through the eyes of students."

The experience of the Kyiv National University of Culture and Arts in the process of distance learning in the context of the Covid-19 pandemic shows that students have the opportunity not only to gain knowledge but also to show creativity and initiative. The practice has shown that Mentimeter can be used not only to study Philosophy but can be implemented to study other social and humanitarian disciplines. The use of the program can also be helpful for the educational process of other higher education institutions, which can be the subject of further research.

Discussion of the described experience by the academic community of technologies provides an opportunity to improve and polish the use of Mentimeter and other digital learning tools. The subject of a separate study should be a comparative analysis of resources and online educational services that implement interactive interaction in real-time (Classtime, Kahoot, Mentimeter, Nearpod, Online Test Pad, Quizalize, Quiz, & Quizlet).

In the course of further research, it is advisable to determine the advantages of every program. It is also essential to analyze the experience of these programs' usage in various disciplines and to show the attitude of teachers and students toward this program. Communication practices that are implemented in the educational process contribute to the formation of an open communicative and educational environment in modern educational institutions in the conditions of distance learning. They contribute to the harmonious development of the individual and overcoming the socio-psychological challenges of the time, which should be the subject of further scientific research.

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