

Psychological Aspects of Effective Communication between Teachers and Students in Online Learning

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Abstract

The study focuses on the psychological aspects of effective communication between teachers and students in online learning. The relevance lies in the need to understand the challenges that arise in the process of virtual communication and identify ways to overcome them. The purpose of the study is to analyse the main psychological aspects of effective communication between teachers and students in the context of using an online learning environment. The research methodology involves the use of statistical methods, content analysis, theoretical and comparative analysis. The study used surveys, small group interviews, and observation. A systematic selection procedure was used to select the respondents, aimed at forming a representative and informative sample. The participants of this study include 121 teachers and 70 students from higher education institutions in Ukraine. The results demonstrate the main learning platforms and messengers used for communication. The level of efficiency of their use is also determined. The key factors affecting the psychological comfort of participants were also identified and recommendations for improving communication effectiveness were developed. The results emphasise the importance of psychological readiness for digital change, the use of active engagement strategies and a digital diet to ensure psychological resilience. The study highlights the problems of lack of non-verbal cues and virtual communication fatigue, recommending the use of art therapy and isotherapy to alleviate psychological difficulties. The general conclusions emphasise the importance of conscious use of digital technologies to ensure successful online communication and psychological well-being of all participants in the learning process.

Keywords: online learning, communication, digitalisation, students, higher education

1. Introduction

In an era of rapid technological progress and growing dynamics of society, modern education is undergoing dramatic changes, with the transition to online learning being a key element. This transition requires not only technical training, but also new strategies and psychological approaches to the interaction between teachers and students. A kind of virtual atmosphere, consisting of screens and electronic devices, poses the challenge of creating effective communication for participants in the educational process, which is key to quality education. Students and teachers face a number of challenges related to the psychological aspects of remote interaction. One of these challenges is to ensure not only the transfer of knowledge, but also the creation of a favourable psychosocial environment that would support the motivation and involvement of each participant in the learning process. In this context, we are talking about a thorough analysis of the psychological aspects that affect the effectiveness of communication in online learning.

It is worth noting that the researchers analysed certain aspects of this issue. Bielialov et al. (2019) examined the formation of a professional performance assessment system in the system of entrepreneurship training. The authors

emphasise the importance of grading and assessment of graduates, contributing to the development of the entrepreneurial education system. Iskakova et al. (2023) investigated the synthesis of personal consciousness, new technologies and philosophical aspects in the education system. The authors try to consider the evolution of the educational system in a complex, considering various influences. Kim J-K (2022) traced the mediating effect of persistence on student learning outcomes in online distance learning. The author considers the interaction of learning motivation and academic self-efficacy. Pascu et al. (2023) analysed students' perceptions of online assessment as a result of the interaction of external factors and students' psychological characteristics. Rahmatullah et al. (2022) examined the contribution of the Digital era 4.0 to the field of education and student psychology. The authors highlight the importance of adapting educational approaches to the requirements of modernity. Wilczewski et al. (2021) investigated the psychological and academic consequences of studying from home and in-country during the COVID-19 pandemic. The authors consider the impact of remote learning on students. Zamani and Mohamad (2023) traced the challenges of teaching and learning in emergency e-learning and emergency learning activities. The authors study the problems of online learning among English language teachers. Ahmed et al. (2021) found that innovative mechanisms in teaching have a positive impact primarily on the motivational component. Asghar et al. (2021) found that social platforms are quite productive in providing emotional support to students. Katz & Kedem-Yemini (2021) examined the psychological aspects of effective communication in distance learning. Kavita et al. (2022) recommend that teachers and administrators of higher education institutions develop programmes for psychological support. Das (2021) described the main psychological factors that have a significant impact on the effectiveness of online learning. Ashe & Lopez (2020) noted that effective communication between teachers and students is essential for the success of distance learning. Teachers are advised to use active communication with students. In general, the integration of social media, the use of LMS, video conferencing platforms and other technologies can significantly improve the learning process and support students' psychological well-being. At the same time, the issue of a comprehensive study of psychological challenges caused by online learning will require additional updating, as the rapid evolution of digital online platforms requires up-to-date research.

1.1 Introduce the Problem

The main issues of studying the psychological aspects of effective communication between teachers and students in online learning include several key aspects related primarily to the online education format, which separates the participants of the educational process spatially and temporally. The lack of physical contact can affect the level of mutual understanding and psychological comfort between participants, which can cause psychological instability. The use of various online platforms and tools is also problematic, leading to technical difficulties that affect the quality of communication. Problems with connectivity and adaptation to new technologies can create stress and obstacles to effective learning. In addition, online learning can cause problems with maintaining students' motivation and active participation in the learning process. Educators need to find effective ways to stimulate interest and engagement. Solving these and other problems requires a comprehensive approach that takes into account the technological, social and psychological aspects of online learning. Research into these issues is aimed at enriching understanding and developing strategies to improve interaction between learners in an online environment.

1.2 Research Focus

The proposed study examines in detail the impact of psychological comfort, mutual understanding and virtual interaction on the quality of the educational process. Also, given the importance of the psychological climate in study groups, the strategies for creating a positive environment conducive to collaboration and exchange of ideas are analysed. Emphasising the importance of adapting psychological methods to the online format, an attempt is made to identify the best ways to improve the interaction between teachers and students in the digital environment.

1.3 Research Aim

The purpose of the article is to study the psychological aspects of effective communication between teachers and students in online learning. In this context, the scientific consideration of the psychological aspects of effective communication between teachers and students in online learning is important for the formation of specific recommendations for the further development of this important aspect of modern education.

2. Method

2.1 General Background

In the context of current challenges in education, the transition to online learning has become a necessity. However, ensuring effective communication between educators and learners on online platforms is proving to be an important

challenge. This quantitative research paper aims to explore the psychological aspects of this communication and develop recommendations for improving its effectiveness.

2.2 Sample Procedure and Participants

A systematic selection procedure was used to select the participants of the study, aimed at creating a representative and informative sample. The participants include 121 teachers and 70 students from Ukrainian higher education institutions. The criteria for selecting participants were determined as follows:

1. Online learning experience: Participants should have experience of teaching or learning in a virtual learning environment. This ensures that participants have sufficient knowledge and experience to be able to provide an informed perspective on the research topic (see Table 1).

Table 1. Respondents' Experience of Online Learning

Online learning experience	
Less than 1 year	
Teachers	Students
8,26%	18,57%
1-3 years	
Teachers	Students
71,90%	65,71%
3-5 years	
Teachers	Students
19,83%	17,14%

Source: author's development

2. Active use of online platforms: Selected participants must regularly use online platforms for education in their teaching or learning practice. This ensures their active participation in virtual learning.

3. Representation of higher education institutions: Participants were to represent a range of higher education institutions in Ukraine, from universities to colleges. This allows us to consider the peculiarities and diversity of educational environments.

4. Qualification level and degree (for teachers only). Participants should have different levels of qualifications and degrees, from PhDs to doctorates. This criterion allows us to consider the different perspectives and experiences of the participants.

5. Active participation in the learning process: Participants should have an active attitude towards learning and the pedagogical process in an online environment. This allows you to study the peculiarities of communication effectiveness in the context of active interaction.

These specific selection criteria consider the diversity and specific characteristics of the participants, ensuring that the results are representative and relevant.

2.3 Data Collection

A comprehensive approach will be used to collect data, considering the various aspects of the effectiveness of communication between teachers and students in online learning. The data collection process will include

1. Structured questionnaires:

Specially designed questionnaires will be distributed to participants, including teachers and students. The questionnaires will contain questions aimed at identifying personal characteristics, views on communication, identifying obstacles and suggestions for improvement. The questionnaire consists of 4 parts. Table 2 below presents the questions from the questionnaire.

Table 2. Questionnaire

Part 1: Experience and Use of Online Learning	<p>Please indicate your experience of using online platforms:</p> <ul style="list-style-type: none"> - Less than 1 year - 1-3 years - 3-5 years - More than 5 years <p>2. The educational platforms you use:</p> <ul style="list-style-type: none"> - Moodle - Google Classroom - Zoom - Microsoft Teams - Other (specify) <p>3. Messengers you use for communication:</p> <ul style="list-style-type: none"> - WhatsApp - Telegram - Viber - Slack
Part 2: Assessing Communication in Online Learning	4. How would you rate the effectiveness of communication in online learning on a scale from 1 to 10 (where 1 is ineffective, 10 is very effective)?
Part 3: The main psychological aspects of communication	<p>What messengers do you consider to be the most effective for interacting in online learning? (Please select 2-3 answers)**.</p> <ul style="list-style-type: none"> - WhatsApp - Telegram - Viber - Slack <p>7. Do you consider messengers to be an effective tool for solving communication problems in the process of online learning?</p> <p>8. How important do you think the psychological aspect of communication is in online learning? (from 1 to 10, where 1 is not important, 10 is very important)</p> <p>Have you experienced any psychological difficulties during your online studies? If so, please describe them.</p> <p>9. What aspects of psychology do you think influence the quality of communication in online learning? (Choose 2-3 answers)</p> <ul style="list-style-type: none"> - Psychological comfort of participants - Stressful situations and their impact on information perception - Motivation for online learning - Psychological safety of participants - Other
Part 4 Recommendations and Additional Information	<p>What psychological strategies do you use to improve communication in online learning?</p> <p>What recommendations would you give to improve communication in online learning, in particular through messengers?</p>

Source: author's development

2. In-depth interviews

Some participants will be interviewed (student focus groups) to obtain more detailed responses and to understand their personal experiences and perspectives. This approach will provide more contextual information. The main research questions in the interviews focused on their social adaptation to the digital learning space. Based on this, a

model of psychological and social adaptation of students to the digital online space was created.

3. Online observation

We will observe actual situations of interaction on online platforms. This will provide objective data on the communication process itself

2.4 Documentation of Responses and Reactions

The collection will include documentation of participants' responses and reactions to specific scenarios and situations that arise during online learning.

This diverse approach to data collection allows us to obtain a wide range of information and provide a comprehensive analysis of the psychological aspects of communication in online education.

Data Analysis

In order to gain a deeper understanding of the psychological aspects of effective communication in online learning, a combined method of analysis will be applied, including several approaches. Thus, the data obtained will be subjected to research analysis using various research methods

1. Statistical analysis. Using statistical indicators to assess the level of communication effectiveness and identify key trends.

2. Thematic analysis of responses. It was carried out to identify key topics, emotions and characteristics of participants in their interaction during online learning.

3. Cross-correlation of data. Determining the relationships between different aspects of communication and psychological factors to identify possible patterns.

4. Content analysis of answers to open questions. In-depth study of open-ended responses to identify unique opinions and ideas of participants.

6. Comparison with the results of previous studies. Based on the method of comparison, the results obtained are compared with existing studies in the field of communication psychology and online learning.

3. Results

3.1 Using the LMS and Online Platforms

In education, effective communication in the online environment is key to successful learning and interaction between teachers, students and other participants. The survey has shown that Moodle (95 respondents) is the most popular learning management system. At the same time, the Google Classroom platform is used by fewer participants, but remains relevant (30 respondents). Moreover, Zoom (120 respondents) are the most popular platforms for online learning, providing a wide range of functionality for learning and teaching materials. Microsoft Teams and Google Meet is used less than Zoom in higher education institutions (41 people) (see Figure 1-2).

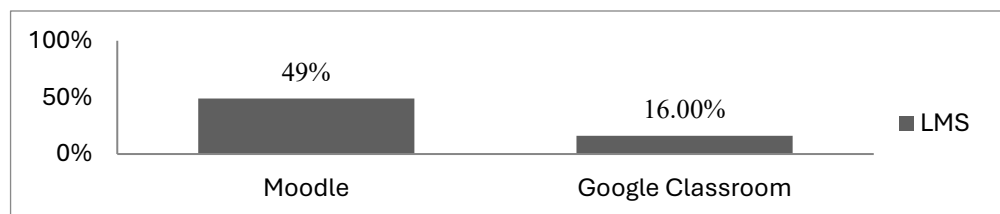


Figure 1. Diagram of the Popularity of Online Learning Management Systems

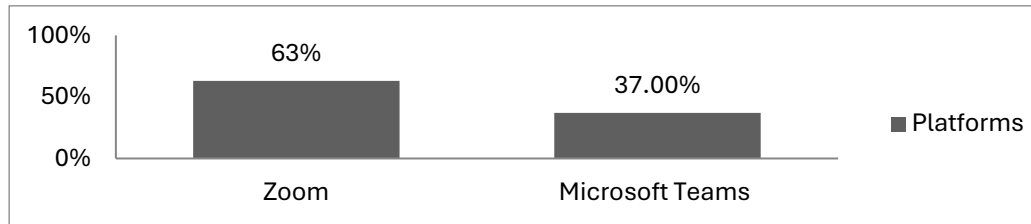


Figure 2. Diagram of the Popularity of Online Learning Platforms

In the field of online learning, the choice of the main messenger for communication plays an important role. Telegram proved to be the most popular messenger among the study participants, possibly due to its focus on security and advanced features. The number of Telegram users is 110 people. WhatsApp and Viber are also used, but with less activity (21 people and 61 people respectively). Figure 3 shows the percentage of the system using these applications.

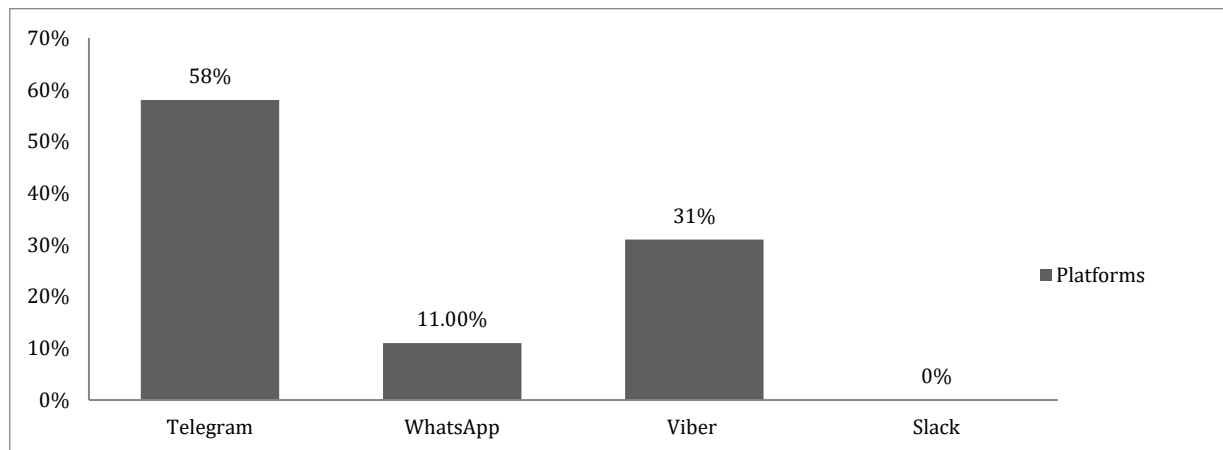


Figure 3. Using Applications

3.2 Assessment of the Role of Communication of Online Learning

The survey asked participants to rate the effectiveness of communication in online learning on a scale from 1 to 10. The findings of the survey indicate significant differences in the perception of the effectiveness of communication between teachers and students.

1. Teachers:

- The majority of teachers (69 people) rated the effectiveness of communication at 8 points.
- A score of 9 was given by 32 people, and the maximum score of 10 was given by 10 people.
- 10 teachers gave a score of 7, which may indicate specific aspects of communication perception.

2. Students:

- The majority of students (43) rated the effectiveness of communication at a high level - 9 points.
- 7 students gave a maximum score of 10, which indicates a positive perception of online communication.
- At the same time, 8 points were given to 8 people, 7 points to 6 people and 6 points to 6 people.

Consequently, many participants chose scores of 8 and 9, indicating that they perceive a high level of communication in online learning. The presence of a score of 7 among teachers may indicate that some aspects of communication may be considered less effective. In general, high scores of 9 and 10 from students indicate a positive attitude towards the quality of communication and perception of the online environment.

This analysis highlights that the majority of participants consider communication in online learning to be effective,

but that there are certain aspects that could be improved to ensure an even higher level of acceptance. For this reason, the survey participants were asked about the importance of the psychological aspect of communication in online learning on a scale from 1 to 10 (see Table 3).

Table 3. Assessment of the Psychological Aspect of Online Learning

Teachers		
Assessment	Number of responses	% ratio
10 points	90 respondents	74,38%
9 and 8 points	20 respondents	16,53%
Students		
10 points	40 respondents	57,14%
8 points	30 respondents	42,86%

Source: author's development

3.3 Assessment of the Role of Psychological Aspect Online Learning

Thus, the high ratings of the importance of the psychological aspect indicate that participants believe that the psychological factor is important for effective communication in an online learning environment. At the same time, psychological comfort is the most important factor that participants pay attention to. This was emphasised by 78 people or 40.84%. At the same time, 71 people (37.17%) admit that stressful situations have a significant impact on the perception of information. On the other hand, motivation, although important, may play a lesser role compared to other aspects of psychology in the context of communication in online learning. This was emphasised by 42 people or 21.99% (see Figure 4).

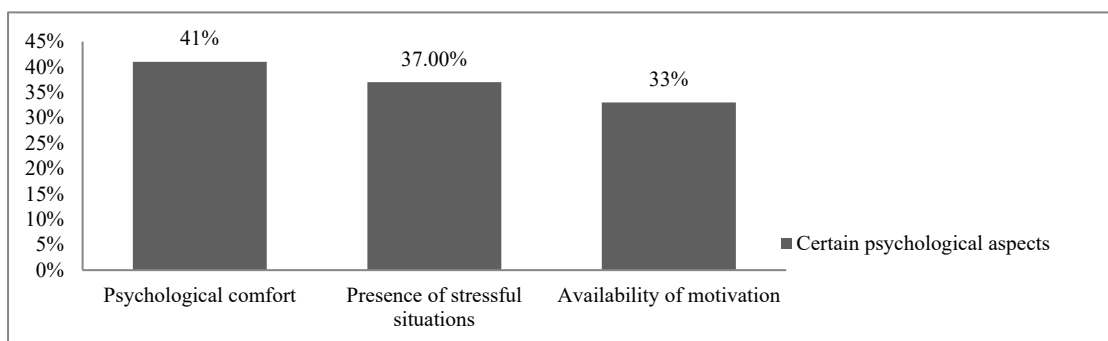


Figure 4. Certain Psychological Aspects

At the same time, the survey and interviews revealed that online learning brings its own challenges in the area of communication between teachers and students. One of the biggest difficulties is the lack of non-verbal cues, which limits the ability to perceive gestures, facial expressions and tone of voice, which usually add context and emotional colour to communication. This can lead to the loss of some information and make it difficult to perceive emotions. In the Table 5 highlighted the critical findings.

Secondly, the lack of physical contact can create a sense of isolation, making it difficult to establish personal connections between participants in the learning process. Students may find it difficult to express themselves, and teachers may find it difficult to read students' reactions. Increasing fatigue from virtual communication is another problem that can affect the quality of information perception. Long periods of time in front of a screen can cause physical and mental fatigue, and therefore, students may experience stress, which affects their concentration. Also, difficulties with concentration can arise from various distractions in the online environment, such as social media or other entertainment, making it difficult for students to stay focused during virtual classes. Remoteness from a standard learning environment can cause time management difficulties for students, who may find it difficult to establish clear boundaries between work and personal time. Also, not being able to directly address the instructor

may affect students' perception of the material. Ambiguities may remain unresolved due to the limited online communication.

Table 5. Critical Findings

LMS and platforms	
Moodle	49%
Google Classroom	16%
Zoom	63%
Microsoft Teams	37%
Messengers	
Telegram	58%
WhatsUP	11%
Viber	31%
Slack	0%
Assesment of the psychological aspect of online learning	
Teachers	
10 points	74,38%
9 and 8 points	16, 53%
Students	
10 points	57,14%
8 points	42, 86%
Certain psychological aspect	
Comfort	41%
Stressful situations	37%
Motivation	33%

Source: Author’s development

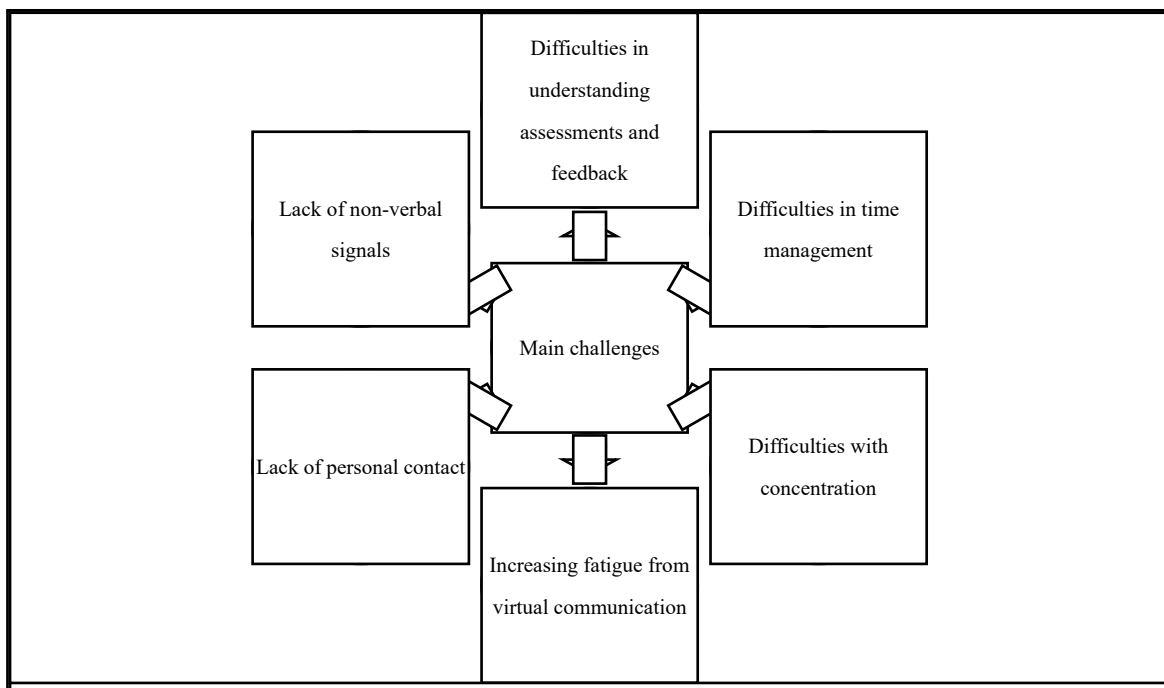


Figure 5. The Main Psychological Challenges in Online Communication

At the same time, it is worth noting that the process of receiving grades and feedback in an online format can cause a sense of isolation due to the often-written nature of feedback, which can be less stimulating than face-to-face discussions. Figure 5 summarises the main psychological challenges in online communication between teachers and students.

To overcome these difficulties, it is important to implement active engagement strategies, use a variety of communication formats and create a positive and supportive virtual environment. We believe that interaction and student engagement are becoming the main aspects of successful online communication in the educational process.

It is crucial to have a solid moral and psychological foundation for adjusting to digital change in a system of efficient online communication between student and teacher, as respondents reported that stress affects their online learning. The establishment of a motivational core inside this moral and psychological archetype is essential because it fosters the moral and psychological capacity necessary for an individual to successfully navigate challenging and dynamic situations, hence enhancing stress resistance. A proactive strategy for preventing stress also include making the necessary mental and emotional preparations. be accomplished by carefully putting into practice a digital diet, a plan created to control and maximize the use of digital media. This fosters a more positive interaction with technology and increases resilience. This not only promotes a healthier relationship with technology, but also helps build resilience to extreme circumstances, which ultimately helps prevent stress.

Digital diet

It is important to implement of a digital diet. A digital diet involves regulating and optimizing digital consumption to promote a healthier relationship with technology. For example, implementing scheduled breaks during online classes can help students manage screen time effectively.

Art therapy methods

In order to overcome certain psychological difficulties during online communication, an integral element is the inclusion of art therapy methods (Shyshkina et al. 2023; Kavita et al., 2022). At the same time, isotherapy, as a form of psychological correction, is of particular relevance for students facing learning difficulties and problems of social adaptation. Visual art, as a component of isotherapy, provides students with a unique way to communicate with themselves, allowing them to freely express thoughts, feelings, dreams and hopes (Morska and Davydova, 2021). It serves as a medium for self-discovery and facilitates the release of negative experiences, significantly contributing to the overall process of adaptation of freshmen in the digital learning environment.

Distraction Methods

In addition, an effective mechanism for overcoming certain problems in the field of online learning involves the use of various methods of distraction from anxiety (Katz and Kedem-Yemini, 2021). It is useful to conduct a clearly structured set of activities, such as stress relief classes, mental “unloading”, relaxation practices, and leisure activities (Asghar et al., 2021). In addition, for effective communication in the online environment, teachers should pay considerable attention to communication with students outside of class, especially for those who may be lagging behind in their studies for various reasons. Teachers should be interested in the moral state of students (Gumennykova et al., 2023; Sydorenko, 2023).

In this framework, it is important to follow the principle of detoxification and not to be intrusive.

Availability of Psychological Support

At the same time, students should be aware that free psychologists work in educational institutions. Focus group interviews showed that not all people are aware of their availability (Tsekhmister, 2023). Besides, higher education institutions should introduce special online psychologists who could help students at any time. Students should also be aware of what a digital diet is (Ashe and Lopez, 2020). A digital diet is a concept that defines the intelligent and conscious use of digital technologies and online resources to ensure efficiency and psychological resilience when using the digital environment (Vasileva et al., 2021). In the context of communication between teachers and students in online learning, digital diet is of particular importance for the preservation of the psychological health of students.

4. Discussion

The results show that psychological aspects are important in the implementation of online learning. This has been proven in a number of modern works (Ahmed et al., 2021; Das, 2021; Hermanto, Rai and Fahmi, 2021). At the same time, the results of the study show that online learning brings its own challenges in the field of communication

between teachers and students: there is a lack of non-verbal cues, which limits the ability to perceive gestures, facial expressions and tone of voice, lack of physical contact, increased fatigue from virtual communication, problems with learning, difficulties in perceiving grades and feedback. All these problems have been confirmed in recent studies (Ferri, Grifoni and Guzzo, 2020; Mozid, 2022; Androsova, 2023; Vovchenko et al., 2022; Zinchenko et al., 2022; Zinchenko, 2022; Hurska and Parshyn, 2023; Rakhimov and Mukhamediev, 2022).

This study has demonstrated that to overcome these difficulties, it is important to implement models and strategies of active engagement, use interactive methods and various communication formats, which will ultimately create a supportive virtual environment for learners. These theses are reflected in modern studies by Tsekhmister et al. (2022) and Krymets (2022). At the same time, the findings on the importance of isotherapy, art therapy, and digital diet coincide with the results of Ovdiienko et al. (2023) and Zhylin et al. (2022), which analysed the main psychological difficulties of distance learning in Ukraine. This study also emphasises that for effective communication in the online environment, a digital diet is important, which contributes to maintaining psychological comfort, as it considers the individual needs and capabilities of the participants in the communication. By providing an understanding of the importance of psychological well-being, it can help to avoid stress and psychological difficulties associated with too much online communication (Oleksiienko et al., 2022). Therefore, the rational use of a digital diet in online learning can be an effective tool for maintaining psychological comfort, optimising communication and ensuring successful learning in the digital environment.

In general, this work brings an innovative view of the problems associated with communication in the educational process in the context of online learning and reveals the psychological aspects that affect the effectiveness of this process. In particular, the novelty of the study lies in the detailed consideration of the impact of online learning on the mental health of both teachers and students. By analysing the psychological aspects, the study goes beyond the technical aspects of online learning and focuses on the emotional and mental challenges that participants in the educational process may face. In addition, this paper identifies specific factors that influence the effectiveness of communication between teachers and learners in online learning. This includes consideration of aspects such as lack of non-verbal cues, stress, maintaining motivation and other factors that determine the quality of interaction.

The practical significance of the work can be seen in the fact that, unlike the theoretical approach, the study provides specific practical recommendations for teachers and students to improve communication in online learning. This can be important information for those who seek to optimise their participation in online education and improve learning outcomes.

However, it is worth noting that no study is infinitely accurate or exhaustive, and there are always limitations that should be taken into account when interpreting its results. Some possible limitations of this paper include:

Geographical factor - the study was conducted among Ukrainian teachers and students, so it demonstrates the results that apply to Ukrainian education.

Small sample size among students - 70 students took part in the survey.

It is also worth noting that only those who had experience of using online learning took part in the study.

However, despite these issues, overall, this study makes an important contribution to understanding the psychological dimensions of online learning and provides specific practical advice for improving communication in this context.

5. Final considerations

Thus, the study indicates the great importance of the psychological aspect in effective communication in an online learning environment. The participants' main focus is on psychological comfort, which is recognised as the most important factor affecting communication. Stressful situations are recognised as significant for the perception of information, while motivation is recognised as less important in the context of the psychology of communication in online learning. The study also points to the difficulties that arise in communication between teachers and students in the online learning environment. The lack of non-verbal cues and physical contact leads to difficulties in perceiving emotions and establishing personal connections. Increasing virtual fatigue, distance from the standard learning environment, and time management constraints are also important issues.

To overcome these difficulties, it is recommended to introduce strategies of active interaction, use of various communication formats and creation of a positive virtual environment. It is noted that it is important for students to have moral and psychological preparation for digital change, including the development of a motivational core and

the use of a digital diet.

Additionally, the use of art therapy and isotherapy methods can be useful in overcoming psychological problems of the participants. Particular attention should be paid to student support, including specific measures to relieve stress and regulate the intensity of online communication.

The study also emphasises the importance of a digital diet to ensure psychological resilience in online learning, given the influence of social media, virtual communication fatigue and the need for rational use of digital technologies. Therefore, given the findings, the implementation of these is necessary to successfully overcome psychological difficulties and increase the effectiveness of communication in the online learning environment.

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