Online Group Student Peer-Communication as an Element of Open Education

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Abstract: Information and communication technologies transform modern education into a more available learning matrix. One of the unexplored aspects of open education is the constant communicative interaction within the student group by using social media. The aim of the study was to determine principal functions of student-led communication in the educational process, the method for assessing its strong points and the disadvantages disrupting traditional learning. For the primary study of the phenomenon, we used methods that made it possible to propose approaches to further analysis. Netnography is the main research method defining the essence and characteristics of the student-led peer-communication. In our research, we applied data visualization, analytical and quantitative methods and developed a set of quantitative indicators that can be used to assess various aspects of student communication in chats. The elaborated visual model can serve as a simple tool for diagnosing group communication processes. We revealed that online group chats perform a support function in learning. They provide constant informational resource on educational and organizational issues and create emotional comfort. Identified features serve to define shortcomings (e.g., lack of students' readiness to freely exchange answers to assignments) and significant factors (e.g., underutilized opportunities for self-organization) that exist in the modern system of higher education.

Keywords: students; online; communication; chat; higher education; netnography

1. Introduction

Education today is becoming more open and constantly accompanies a person thanks to information and communication technologies [1–3]. The term "open education" is often used in the scientific literature without proper definition. Since this form of education not only implies many diverse educational practices, some of which (massive open online courses, e-textbook and open educational recourses) are emphasized by the authors [4–6], but also determines transition of education to a new stage of development, we suggest it is necessary to denominate certain functional technologies in the definition of open education, as it is formulated by The University of British Columbia: a collection of practices that utilize online technology to freely share knowledge [7]. In Stracke's denotation there are some important aspects which identify openness of education: visionary, operational and legal [8]. The European Commission's meaning of open education highlights its principal goal: widen access and participation to everyone by removing barriers and making learning accessible, abundant and customizable for all [9].

Massive open online courses, video lectures, webinars, educational applications, etc. become a part of the everyday life of many people. One may learn at any time and any place. In some situations, it is difficult for students to distinguish the interweaving of educational and non-educational activities. Updating information on social networks, in email and messengers, which are constantly monitored throughout the day, creates a rich information space where questions related to education play an important role. University teachers today actively use social media not only to inform [10–12], but also for organizing student discussions [13–15]. Students are given assignments to create diverse content [16,17]. Many authors point out that social media creates a unique learning environment [18–20].

Several studies are devoted to the investigation of student communications; however, as a rule, we mean groups specially organized by teachers that solve a specific educational task [21,22] sometimes with a facilitator [23] or specially organized by teachers to support the course [24,25]. However, chat rooms of student academic groups are a recent trend. Students create them for themselves. Their role in education has been little studied thus far.

Student communication using ICT is quite natural, but discussions can have different goals—entertaining, social or educational. Moreover, the latter seems to be the latest achievement. On the whole, a rather cautious attitude towards students' increase in social networks was caused by their use for entertainment and social aims but only very rarely for educational purposes [26,27]. Selwyn, analyzing students' Facebook walls, found five main themes emerged from the data.: (1) recounting and reflecting on the university experience; (2) exchange of practical information; (3) exchange of academic information; (4) display of supplication and/or disengagement; and (5) "banter" (i.e., exchanges of humor and nonsense) [28]. Nevertheless, the great educational potential of social media was evident to teachers and students [29]. It turned out that the use of social networks with information and educational goals has a positive effect on academic performance [30,31]. Recent studies indicate that social networks are increasingly used by students for learning purposes [18,32].

The university arsenal includes special groups in social networks dedicated to faculties, specific subjects or certain activities, which are primarily devoted to organizational issues related to training, as well as also include tasks and file sharing [33]. Coughlan and Perryman analyzed student-led Facebook groups and revealed that educational content ranged from 10% to 100% [34]. Ali pointed out that Facebook is being used for collaborative learning, assessment preparation, creating peer connections, providing support, organizing studies and sharing educational resources [35]. Chen et al., based on a study of student communication, claimed that new literacy arises, which is expressed in special types of messages aimed at community involvement [36]. The most common type of message is collective intelligence (to pool knowledge with others), followed by appropriation (to meaningfully sample and remix media content) and fun (to present things in an interesting or enjoyable way). Less popular types are performance (to adopt alternative identities for the purpose of improvisation) and play (to experiment with one's surroundings as a form of problem-solving).

Researchers consider student-led social media communications as open educational practices [34]. At the same time, the openness of student exchange of information generates some challenges. Coughlan and Perryman were concerned that tutors can be openly criticized in that environment [34]. Another problem is the great opportunities of academic dishonesty. On social networking sites, contract cheating is very common [37,38]. As a part of free ongoing exchange of information between students, the possibilities of cheating are increasing. Ali gave the example of exam questions distribution, which is prohibited by the rules [35].

2. Materials and Methods

The aim of the study was to define principal functions of student-led communication in the educational process and identify the method for assessing its strong points for the open education improvement and disadvantages that disrupt traditional learning. The principal goal determined special tasks: the initial study of group peer-communication, its goals, content and specifics in the structure of student life. Based on this, the main method was netnography, which allows conducting

qualitative research of online communication [39,40]. Support functions were performed by some analytical, quantitative (statistical processing and content analysis) and data visualization methods.

The study among those who wished to take part took place in two stages. The first stage was carried out in January 2020. We studied independent group communication of first-year students in Peter the Great St. Petersburg Polytechnic (SPbPU) using short informal interviews and print screens of conversations. The second phase was devoted to analyses of 100 consecutive messages in 14 student groups of 1–3 courses of study from several Russian universities (SPbPU, Siberian Federal University, Russian State Hydrometeorological University, St Petersburg University, Saint Petersburg State University of Aerospace Instrumentation and RUDN University) starting from, 1 December 2019. Data were collected from students wishing to participate in the study, who obtained consent to submit anonymized messages from all group members. The groups included 10–29 people.

Examples illustrating results of the study are anonymized in terms of students' names and nicknames, as well as specific features of tasks, titles, toponyms and any other references that may identify an individual, teacher or course. Ethical approval was received from the Ethics Commission founded in the Institute of Humanities, Peter the Great St. Petersburg Polytechnic University, which is ruled by the code of ethics of the Russian Society of Sociologists.

3. Results

3.1. The First Part of the Study: Qualitative Analysis of Student Group Conversation

In the first part of the study, we identified the most common issues of student group communication. It was found that all groups of students have group conversations in the social network vKontakte (the most popular in Russia, an analog of Facebook). In some cases, there were several groups. Apart from the main group, supplementary thematic ones were created, which in some situations were used not only for the initial purposes. For example, initially, an additional group was created to organize the intragroup Secret Santa, but, later, it continued to be used to discuss less formal issues than a study conversation. Sometimes, WhatsApp was used as an additional communication platform. In particular, it was used by students of linguistics to discuss the Chinese language course in connection with the convenience of placing audio files. A group of foreign students with a predominance of Chinese used WeChat to communicate.

Besides textual information, which for the most part was short phrases of several words, voice messages, images, attached files and photos were used in groups. Students used in the texts simplified language constructions, slang, sometimes deliberately incorrect spelling, anacoluffs and obscene expressions; often there were no capital letters or punctuation marks, e.g., periods, commas and question marks.

Students tried to keep the main academic conversations with thematic ones, discussing educational and organizational issues. The content of communication related to study included answers to different questions and inquiries from those who did not see something, did not understand, did not have time and did not know educational material, for example:

A: guys

A: anyone have boltzmann distribution or perrin experiment?

A: that something fucking everywhere

A: uh come on

B: can only advise you sneak [secretly get] *photos in ****

C: In perrin experiment observed particles under microscope, noted the position of particle, marked trajectory. also checked num of particles on the emulsion layer. Determined the value of avogadro constant

C: in short

C: boltzmann distribution 1 formula with explanation

In this polylogue, it is interesting that the phrase *"uh come" on* was sent 6 min after the previous one and that the conversation took place at 12 a.m. It means that the student expected prompt "round-the-clock" peer support.

A separate topic was the specifics of certification: how it is conducted, what you need to know firstly and the experience of training. Quite often, students were interested in how their groupmates prepare and how much they have learned:

A: May I repeat where you get tickets for mpc?
B: he sends it to email
A: can't find them there
B: it is there
B: scroll down
C: sample list of questions
C: just stuff like that
A: found
A: thank you
D: Dear
D: Anyone learned anything?
B: No))) [a bracket and several brackets in a row in Russian computer correspondence mean a smiley]
E: Out of current
E: Rather trying

Organizational issues usually included questions about the time of classes and announcements from the leader about the necessary activities.

However, it would be wrong to consider such conversations as exclusively utilitarian. Groupmates' support was also emotional. In conversations, there were joke pictures, stickers and emoticons. There was everyday communication in conversations: congratulations, jokes, expression of emotions regarding educational issues, empathy, debates, questions and answers, inquiries on how others are preparing, etc.

This is an example of a joke response:

A: The exam will be held on the 26th
B: Has he [the teacher] told you that [missed question mark]
A: no putin called me
A: and said

Off-topic conversations also took place, for example selling something in a group and invitations to city events. Nevertheless, in some cases, instead of concentrated educational information, the group simply discussed different topics. Several students did not like it and offered to "stop flooding" or even create a new group for exclusively academic communication. For example, such a dialogue took place after long conversations that turned into a conflict and then a new educational group was created.

- *Fucking changed the conversation*
- *Ahah yes*
- *Come on*
- *All is peaceful*
- *But got a billion messages*
- *At first it was like a business conversation*

In general, the main function of the group could be considered as supporting learning: the students promptly received answers to questions (answers most often occurred within 10 min, and very rarely more than 1 h). The group contained information and files from teachers (tasks, presentations,

questions for certification, etc.). A group member, even in the passive role of the reader, unwittingly became involuntarily involved in the circle of currently relevant educational issues, which is especially important for first-year students for whom the university atmosphere can be difficult and much more autonomous than at school. In some cases, the support was offline when students helped groupmates in specific matters (pick up a gradebook from the dean's office, reformat the file, etc.). Group communication provided emotional support. The students were in a circle of like-minded people who shared the same worries and experiences:

A: At least 7 people got retake

B:

B: N, don't worry show this M how to pass physics

C: Really everything is good, you are still all smart! Retake—not a sentence Love and hugs to everybody

D:

E: Oh that makes me feel so much better

B:

However, in discussions, there were also disputes and even quarrels. Sometimes conflicts were constructive, helping to resolve intra-group problems. However, there were personal conflicts usually associated with learning. For example, in the screenshots presented by students, there was a dispute about priorities in educational activities and favorite subjects. It began in response to a sarcastic remark to a message, describing the situation when the student did not get certification. An indignant remark followed a malicious replica: "*After my words you could say liki Yo bro everything can be, yes, whole life ahead*". It means that the student was indignant, not receiving the usual sympathy in such cases. Then, she received an answer that she herself was also previously insensitive, saying, "*I see why the guy left you*".

The groups discussed tasks that require collaboration. In some cases, elements of self-organization could be seen in the group. For example, students tentatively agreed on a sequence of speeches at a seminar and discussed the distribution of topics and participants in carrying out group assignments. Below, there is a piece of the discussion about sequence of presentations at the seminar:

A: Otherwise we'll quarrel even more

B: Let's alphabetically and that's it

C: I'm actually for N going first, besides we didn't manage to perform our presentation because of someone

A: It's necessary to give the first opportunity to those who have little and who did not speak

A: and the last ones are those who have more credits and text

More complex options for self-organization were also discussed, for example the organization of collective protest behavior against situations in the education process that seem to be wrong or unfair:

- *I suggest not learning questions that we did not have (marked with a check mark)* [*attached photo of questions with different notes, tags, circles, etc.*].
- *I suggest not learning questions* [this is a joke that should show that reducing the number of questions will not change the situation when you need to prepare much, in contrast, for example, when you take a cardinal decision not to prepare at all].
- *But I don't remember about business negotiations, we discussed?*
- *nah*
- *I support* [*quote: I suggest not learning questions*]
- *The best solution* [*quote: I suggest not learning questions*]

- *We are smart kids and we will learn everything*
- *The concept *** we studied at the lecture* [quote: *I suggest not learning questions which we......*]
- *It's not marked* [quote: *The concept *** we studied............*]
- *A*
- *With a checkmark*
- *B* [It is a joke. After *A*, which means "it turns out like this", the next letter of the alphabet was said.]
- *Such ogression* [quote: B]
- *Itis called lofe*
- *And that addressed to me?* [quote: B]

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At the same time, such group conversations made it easier to ask for help and share assignment decisions, even when they were intended for individual work. In most cases, students helped their groupmates, but not always. Apparently, not everyone, and not in any situation, was ready to share the results of their intellectual work. Intragroup relationships might also be relevant. Sometimes, the requested task might be sent personally, instead of being put up for a group discussion.

Here, are sample response requests:

A: Guyssssssss
Please, throw KEYS, photo
B: [photo of the task done]
A: Thank you! Or maybe someone else will.
Because it's not all clear))) [a bracket or several brackets in a row in a Russian computer correspondence mean a smiley]
A: Well heyyyyy
A: Throw your answer

Here you can see that the author of the request counted on the help that he received within 1 h. However, the request for the "best" version was no longer considered "legitimate" and was not provided by the group.

Sometimes the results of the work were not shared in response to a straightforward request, but as a result of joint discussion of existing problems:

A (the leader): [sends an e-mail from the teacher with the task to record the contents of the audio file with the text]

B: Who wrote the names in hieroglyphs?
C: I
D: True info?
C: 扑街
C: This is Vika
E: Guys,
E: there in the dialogue, where is talking about *
E: There's a phrase ***
E: is this name [question mark is missed]
G: No one knows

H: There's a word after that

G: [sends the photo of his version of the text recording]

Another option of academic dishonesty was sharing the assignments or answers to tests, which was even more valuable for students, since this information would help to get a better mark in certification. In the polylogue, it was reflected in emotional gratitude.

A: Guys

A: Does anyone have a photo of your last math paper? or +- what will be in the tp?

A: I would be very grateful!

B: I will put the question in a different way did someone take a picture of the tp who already had it

C: [photo of the test]

B: To the League of saints

B: Out of turn

B: Thank you

We defined the main content of student conversations (Figure 1). Messages usually fell into one of three major categories: study, organization of the educational process and everyday communication. Emotional support can be thematically related to any of the available topics. Elements of self-organization, when a group develops a definite plan of action, may present during the implementation of training tasks and in solving organizational issues.
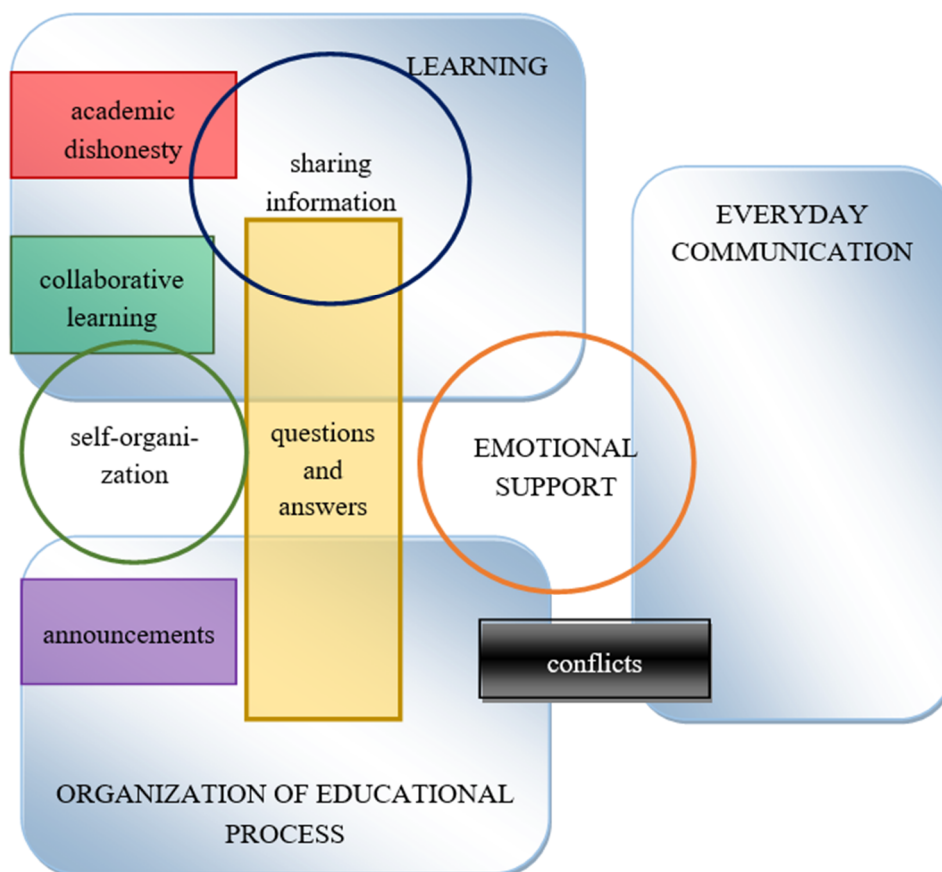
Figure 1. The main content of student conversations.

3.2. The Second Part of the Study: The Potential of Quantitative Analysis of Communication in a Group Conversation in the Social Network

In this part of the study, 100 consecutive messages from 1 December 2019 in 14 conversations in the Russian social network vKontakte were analyzed. To evaluate the conversation, quantitative criteria were developed that can be useful for a comparative analysis of group conversations:

Communicators' activity: The number of people in academic groups in which communication was studied ranged from 10 to 29 people. The number of people participating in the studied part of the polylogue ranged from 37% to 90%, on average 59%. The maximum participation was in the smallest group of 10 people.

The intensity of communication was estimated by the number of days for 100 messages. The maximum intensity was 100 messages in two days, while the minimum intensity was 100 messages in 16 days. The average value was 6.3 days. The average number of messages per day was 24.9.

Communicative syntax. As mentioned in the first part of the study, it was customary for students to divide sentences into short phrases and send each as a separate sentence. Therefore, there were fewer completed phrases in 100 messages: from 45 to 93, on average 66. In this case, in conversations, 2.2–6.1 words per message were used, and on average 4.5 words.

Emotional expressiveness. The traditional punctuation marks in online communication were supplemented or replaced by visual symbols. The most common way to show certain emotions is to use smileys, special stickers, emoji, etc. Only one of the considered message sequences did not have such visual expressors of emotions at all, while at maximum in 100 messages there were 29 smileys and 43 emoji. On average, one conversation had 14.2 visual expressive symbols.

Interrogativity degree of the polylogue. Since one of the basic functions of conversations is operational support, questions (whether a question mark is put or not) constitute an essential part of communication. In the conversations examined, they made up from 7% to 29% of the total number of replicas, and on average 17%.

For intuitively clear and instant comparison of groups according to the features of communicative behavior, which is an advantage for the teacher, a visual scheme was developed including basic parameters. The approach, of course, can be used not only for the analysis of intragroup student communication but also for other types of group communication.

We defined the average data of groups in the form of illustration, where the character size is the activity of communicators (Figure 2). The size of the text cloud for message is the communication intensity. The average number of words in the sentence is shown in the cloud, interrogativity degree is the size of the question and emotional expressiveness is the size of the smile.
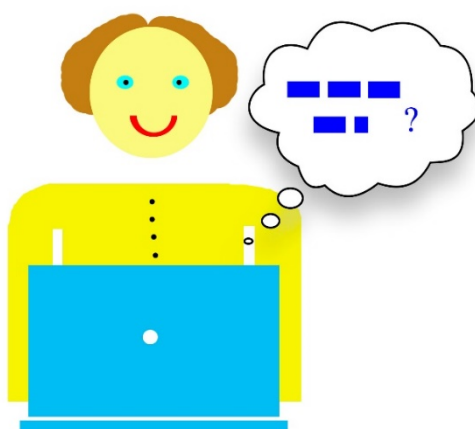
Figure 2. Average indicators for group communication, presented as an image.

A comparative visual representation of several group conversations showed the difference in the features of group communication. For comparison, consider the features of two groups—with

the longest (6.1) and the shortest average message size (Figure 3). Other features of the group were large emotional expressiveness (46), slightly increased proportion of participants (73%) and number of interrogative sentences (22) and significantly lower than average communication intensity (12.5 messages per day). The group with the shortest average message size (2.2) (Figure 3b) was characterized by weaker activity of communicators (52%), few interrogative sentences (11) and almost the complete absence of visual expressors of emotions (only three smileys).

(**a**) (**b**)
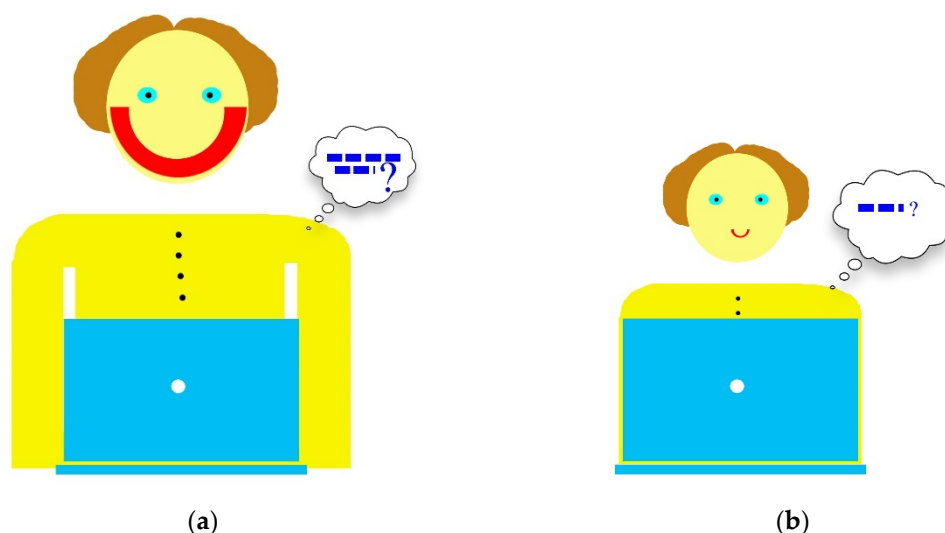
Figure 3. Examples of visual representation of the features of groups with the longest (**a**) and shortest (**b**) average message size.

The indicators visually presented in Figure 3 are indirect in nature; nevertheless, a certain overall picture of the conversation develops. It seems that the first of the considered groups to a greater extent fulfilled the supportive function for the educational process: informational (interrogative sentences) and emotional (visual expressors of emotions). A great interest in communication is visible. Longer sentences may indicate a higher quality of conversation, while the intensity of communication in both cases is relatively small.

The available data allow us to provide some information about the content side of communication in Russian universities. Taking all conversations as a whole, we examined the thematic division of the texts. Three main categories were as follows: study (41%), organizational issues (33%) and everyday communication (26%).

We analyzed the content of each category in more detail. Within the "study" category, the largest number of messages was devoted to questions and answers on various types of certification (tests, exams, term papers and independent work) (18%) of all messages in this category. The popularity of this topic was associated with the selected review period (December is the last month before certification). The next most popular topics were how others completed the task (14%) and clarification of information on the task (13%). Less popular topics were questions about the given task and how to do the task (10% each) and messages related to the organization of joint group work (collection of necessary information, direct work on the task) (9%). We identified scored categories of requests for sharing information given by the teacher (7%) and requests for solving the task (5%). Fewer messages were associated with sharing additional sources, completed tasks, requests and consent to do tasks for another.

Among organizational issues, there were more questions about certification (what to do, when and where to go for getting certification on a subject, retake, etc.) (30%). Next were organizational issues related to specific classes (for example, who will attend/do something, the format, cancellations, rescheduled classes and the name of the teacher) (21%), followed by topics not related to academic subjects (about the things left, addresses of buildings, requests to pick up educational documents,

management schedule, library schedule, etc.) (16%). Questions about class schedules represented 13% of all organizational messages. It is interesting that this information was in most cases presented on the site, but students preferred to ask rather than look there. In one of the groups, a special bot was created that answered similar questions. Eight percent of messages were devoted to the topic of communication methods with the teacher. There were also messages about lateness (5%), as well as discussions about scholarships, skipping classes, etc.

The main content of everyday communication was discussion of diverse common interests (49%), jokes and answers to them (43%). There were also congratulations, words of support, organization of joint extra-university events, cues of courtesy, etc.

We identified the 30 most common words in the student polylogues (Figure 4). The most popular word was "thank you", followed by forms of appeal to groupmates. In Figure 4, the words related to the obtaining of information are in violet, the names of specific subjects and forms of classes are in yellow, and the words that describe other elements of the educational process are in blue.
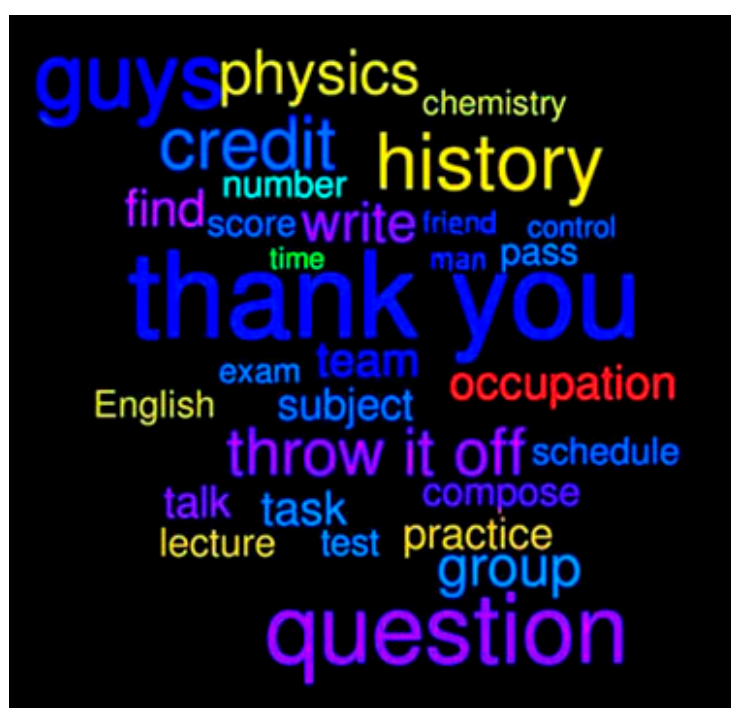
Figure 4. The most common words in student conversations.

4. Discussion

We may conclude that the development of ICT guides higher education to the open educational space. This movement is now presented in the form of accessible open educational resources and massive open online courses. Today, such forms of education are widely used as a lifelong learning opportunity in higher education [41–43]. However, it is clear that open education is not just a new technological solution providing free access to educational content. It challenges existing practices and requires new approaches.

This study proves that student-led group communication is a serious supporting factor that contributes to the inclusion of students in current educational processes and problems. Such kind of communication helps disseminate the necessary educational information and supports mutual assistance and collaborative learning. Thanks to conversations on social networks, students become closer to each other. However, it is clear that different groups to a greater or lesser extent perform these functions. The criteria given in the work can help evaluate different aspects of such activities.

One of the valuable aspects of group communication is messages about collaborative learning, which, however, occupied only 9% of messages in this study. It proved the insufficient focus of education on such practices [44]. Some concerns were partially confirmed [34]. Open educational practices may lead to academic dishonesty. Although this practice was not the dominant topic, it was perfectly acceptable. This signal indicates that the current system of knowledge testing is not ready for the transition to open educational practices. An open educational system should encourage student interaction, collaborative learning and maintain the availability of given questions and answers that help whom needs it. Moreover, the control tests should ensure that the assessment is adequate.

Higher education management and university teachers should consider in their practices the existence of the relationships between students. Permanent online connection makes it possible to distribute group tasks extensively, implying sharing knowledge, discussions and teamwork in the educational process, which develops great opportunities for soft skills progress. At the same time, it is required to make decisions about changing a number of certification forms that do not correspond to open education. Cronin noted that teachers are at different levels of "openness" and readiness for it, but "all thinking deeply about their digital and pedagogical decisions" [45] (p. 7). Nascimbeni et al. used open educators' factory methodology to map the capacities of university teachers across four areas: open design, open content, open teaching and open assessment. Moreover, the authors emphasized that the latter area is the least open [46] (p. 521).

The proposed method for assessing and visualizing student communication can be used by teachers and university administrators to evaluate various aspects of the polylogical communicative behavior of students in the network. A survey of the development and effectiveness of education-related communication oon social networks and messengers could be used not only to assess its role in the educational process, but also to identify possible psychological and adaptive problems within the student group.

The results of the study are limited to the framework of several student groups at several universities in Russia that can give only an initial idea of intra-group communication. The opportunity to compare these findings with the features of electronic intra-group communication in other countries is of special interest. Collectivism, the desire to act together, and sharing what you have as well as laziness correspond to stereotypes related to the Russian mentality [47,48]. It may have an imprint on the thematic content of the conversations. It is interesting how the level of interaction in more individualistic cultures will differ from Russian communication strategies.

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References

1. Shipunova, O.; Evseeva, L.; Pozdeeva, E.; Evseev, V.V.; Zhabenko, I. Social and educational environment modeling in future vision: Infosphere tools. *E3S Web Conf.* **2019**, *110*, 2011. [CrossRef]
2. Shipunova, O.D.; Mureyko, L.V.; Kozhurin, A.; Kolomeyzev, I.V.; Kosterina, O.N. Resources to matrix control of mental activity in information environments. *Utop. Prax. Latinoam.* **2019**, *24*, 113–122.
3. Evseeva, L.I.; Shipunova, O.D.; Pozdeeva, E.G.; Trostinskaya, I.; Evseev, V.V. Digital Learning as a Factor of Professional Competitive Growth. In *Advances in Intelligent Systems and Computing*; Springer Science and Business Media LLC: Berlin/Heidelberg, Germany, 2019; Volume 1114, pp. 241–251.

4. Paskevicius, M.; Irvine, V. Open Education and Learning Design: Open Pedagogy in Praxis. *J. Interact. Media Educ.* **2019**, *2019*. [CrossRef]

5. Cronin, C. *Open Education*; Brill Sense: Leiden, The Netherlands, 2020; pp. 9–25. [CrossRef]

6. Zhang, K.; Bonk, C.J.; Reeves, T.C.; Reynolds, T.H. *MOOCs and Open Education in the Global South: Challenges, Successes, and Opportunities*; Routledge: Abingdon, UK, 2019.

7. Open Education. Available online: https://wiki.ubc.ca/Documentation:Open_Education (accessed on 8 August 2020).

8. Stracke, C.M. Quality Frameworks and Learning Design for Open Education. *Int. Rev. Res. Open Distrib. Learn.* **2019**, *20*. [CrossRef]

9. Andreia, I.D.S.; Yves, P.; Jonatan, C.M. *Opening up Education: A Support Framework for Higher Education Institutions*; Publications Office of the European Union: Luxembourg, 2016.

10. Nicolai, L.; Schmidbauer, M.L.; Gradel, M.; Ferch, S.; Antón, S.; Hoppe, B.; Pander, T.; Von Der Borch, P.; Pinilla, S.; Fischer, M.R.; et al. Facebook Groups as a Powerful and Dynamic Tool in Medical Education: Mixed-Method Study. *J. Med. Internet Res.* **2017**, *19*, e408. [CrossRef] [PubMed]

11. Neier, S.; Zayer, L.T. Students' Perceptions and Experiences of Social Media in Higher Education. *J. Mark. Educ.* **2015**, *37*, 133–143. [CrossRef]

12. Aladyshkin, I.; Kulik, S.; Odinokaya, M.; Safonova, A.S.; Kalmykova, S.V. Development of Electronic Information and Educational Environment of the University 4.0 and Prospects of Integration of Engineering Education and Humanities. *Artif. Intell. Techn. Adv. Comput. Appl.* **2020**, *131*, 659–671. [CrossRef]

13. Henry, D.S.; Wessinger, W.D.; Meena, N.K.; Payakachat, N.; Gardner, J.M.; Rhee, S.W. Using a Facebook group to facilitate faculty-student interactions during preclinical medical education: A retrospective survey analysis. *BMC Med. Educ.* **2020**, *20*, 1–10. [CrossRef]

14. Chang, W.-L.; Lee, C.-Y. Trust as a learning facilitator that affects students' learning performance in the Facebook community: An investigation in a business planning writing course. *Comput. Educ.* **2013**, *62*, 320–327. [CrossRef]

15. Anosova, N.; Dashkina, A. The Teacher's Role in Organizing Intercultural Communication Between Russian and International Students. *Artif. Intell. Tech. Adv. Comput. Appl.* **2020**, *131*, 465–474. [CrossRef]

16. Frydenberg, M.; Andone, D. Creating micro-videos to demonstrate technology learning and digital literacy. *Interact. Technol. Smart Educ.* **2016**, *13*, 261–273. [CrossRef]

17. Osman, G.; Koh, J.H.L. Understanding management students' reflective practice through blogging. *Internet High. Educ.* **2013**, *16*, 23–31. [CrossRef]

18. Quansah, J.Y.D.; Fiadzawoo, J.K.; Kuunaagmen, C.K. Students' engagement in social media and its mainstay for teaching and learning. The case of the wa nursing training college. *Am. J. Educ. Res.* **2016**, *4*, 961–969. [CrossRef]

19. West, B.; Moore, H.; Barry, B. Beyond the Tweet. *J. Mark. Educ.* **2015**, *37*, 160–170. [CrossRef]

20. Sobaih, A.E.E.; Moustafa, M.A. Speaking the Same Language: The Value of Social Networking Sites for Hospitality and Tourism Higher Education in Egypt. *J. Hosp. Tour. Educ.* **2016**, *28*, 21–31. [CrossRef]

21. Adanir, G.A. Detecting Topics of Chat Discussions in A Computer Supported Collaborative Learning (CSCL) Environment. *Turk. Online J. Distance Educ.* **2019**, *20*, 96–114. [CrossRef]

22. Scoular, C.; Care, E. Monitoring patterns of social and cognitive student behaviors in online collaborative problem solving assessments. *Comput. Hum. Behav.* **2020**, *104*, 105874. [CrossRef]

23. E. Hmelo-Silver, C. Analyzing collaborative knowledge construction. *Comput. Educ.* **2003**, *41*, 397–420. [CrossRef]

24. Estus, E.L. Using facebook within a geriatric pharmacotherapy course. *Am. J. Pharm. Educ.* **2010**, *74*, 145. [CrossRef]

25. Matli, W. How Undergraduate Students 'Chat Language'in Whatsapp. In Proceedings of the 2019 Open Innovations (OI), Cape Town, South Africa, 2–4 October 2019; Institute of Electrical and Electronics Engineers (IEEE): Piscataway, NJ, USA, 2019; pp. 401–407.

26. Murray, C. Schools and Social Networking: Fear or Education? *Synerg. Perspect. Local* **2008**, *6*, 8–12.

27. Madge, C.; Meek, J.; Wellens, J.; Hooley, T. Facebook, social integration and informal learning at university: 'It is more for socialising and talking to friends about work than for actually doing work'. *Learn. Media Technol.* **2009**, *34*, 141–155. [CrossRef]

28. Selwyn, N. Faceworking: Exploring students' education-related use of Facebook. *Learn. Media Technol.* **2009**, *34*, 157–174. [CrossRef]

29. Grosseck, G.; Bran, R.; Tiru, L. Dear teacher, what should I write on my wall? A case study on academic uses of Facebook. *Procedia Soc. Behav. Sci.* **2011**, *15*, 1425–1430. [CrossRef]

30. Junco, R. Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance. *Comput. Hum. Behav.* **2012**, *28*, 187–198. [CrossRef]

31. Lambić, A. Correlation between Facebook use for educational purposes and academic performance of students. *Comput. Hum. Behav.* **2016**, *61*, 313–320. [CrossRef]

32. Toker, S.; Baturay, M.H. What foresees college students' tendency to use facebook for diverse educational purposes? *Int. J. Educ. Technol. High. Educ.* **2019**, *16*, 9. [CrossRef]

33. Ean, L.C.; Lee, C.E. (Catherine) Educational use of Facebook by undergraduate students in Malaysia higher education: A case study of a private university. *Soc. Media Technol.* **2016**, *1*, 1–8. [CrossRef]

34. Coughlan, T.; Perryman, L.-A. *Are Student-Led Facebook Groups Open Educational Practices?* OER15: Cardiff, UK, 2015.

35. Ali, A. Medical students' use of Facebook for educational purposes. *Perspect. Med Educ.* **2016**, *5*, 163–169. [CrossRef]

36. Chen, S.-Y.; Kuo, H.-Y.; Hsieh, T. New literacy practice in a facebook group: The case of a residential learning community. *Comput. Educ.* **2019**, *134*, 119–131. [CrossRef]

37. Amigud, A.; Lancaster, T. I will pay someone to do my assignment: An analysis of market demand for contract cheating services on twitter. *Assess. Eval. High. Educ.* **2019**, *45*, 541–553. [CrossRef]

38. Bretag, T.; Harper, R.; Burton, M.; Ellis, C.; Newton, P.M.; Rozenberg, P.; Saddiqui, S.; Van Haeringen, K. Contract cheating: A survey of Australian university students. *Stud. High. Educ.* **2018**, *44*, 1837–1856. [CrossRef]

39. Kozinets, R.V. Netnography. In *The International Encyclopedia of Digital Communication and Society*; Wiley: Hoboken, NJ, USA, 2015; pp. 1–8.

40. Bowler, G.M., Jr. Netnography: A method specifically designed to study cultures and communities online. *Qual. Rep.* **2010**, *15*, 1270–1275.

41. Hilton, J. Open educational resources, student efficacy, and user perceptions: A synthesis of research published between 2015 and 2018. *Educ. Technol. Res. Dev.* **2019**, *68*, 853–876. [CrossRef]

42. Baas, M.; Admiraal, W.; Berg, E.V.D. Teachers' Adoption of Open Educational Resources in Higher Education. *J. Interact. Media Educ.* **2019**, *2019*. [CrossRef]

43. Bozkurt, A.; Koseoglu, S.; Singh, L. An analysis of peer reviewed publications on openness in education in half a century: Trends and patterns in the open hemisphere. *Australas. J. Educ. Technol.* **2019**, *35*, 35. [CrossRef]

44. Abramczyk, A.; Jurkowski, S. Cooperative learning as an evidence-based teaching strategy: What teachers know, believe, and how they use it. *J. Educ. Teach.* **2020**, *46*, 296–308. [CrossRef]

45. Cronin, C. Openness and Praxis: Exploring the Use of Open Educational Practices in Higher Education. *Int. Rev. Res. Open Distrib. Learn.* **2017**, *18*, 18. [CrossRef]

46. Nascimbeni, F.; Burgos, D.; Campbell, L.M.; Tabacco, A. Institutional mapping of open educational practices beyond use of Open Educational Resources. *Distance Educ.* **2018**, *39*, 511–527. [CrossRef]

47. Bokova, T.N. Mentality Influence on the Learning Process in China and Russia. *Eur. Proc. Soc. Behav. Sci. EpSBS* **2019**, *69*, 164–172. [CrossRef]

48. Hoferichter, F.; Bakadorova, O.; Raufelder, D.; Francisco, M.B. A comparison of Russian and Philippine secondary school students on their sociomotivational relationships in school: A motivation typology. *Int. J. Sch. Educ. Psychol.* **2018**, *7*, 89–101. [CrossRef]