

Prospects for the Development of E-learning Technologies

Artem Feshchenko, Galina Mozhaeva, Ivan Kulikov and Nadezhda Zilberman
Faculty of Philosophy, Tomsk State University, Lenin Avenu-36, Tomsk, Russian Federation

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Abstract: One of the latest innovations in the technology of e-learning is the use of social networks (SN) for the creation and distribution of educational content and organization of communication of teachers and students. Orientation of the younger generation of students in the regular use of the SN in their daily, academic and professional life casts doubt on the prospects of the development of traditional learning management systems (LMS). The article examines the attitudes of students and teachers to the possibilities in learning LMS and SN, compared the advantages and disadvantages of the various e-learning technologies. The study analyzed the results of the survey respondents from 25 universities of the Russian Federation, Ukraine and Kazakhstan. For the analysis of the responses were used statistical treatment of data and content analysis. The study identified features of the application in the training of LMS and SN, different attitudes of students and teachers to the LMS and SN.

1 INTRODUCTION

In modern education the important place is taken by e-learning, which development is largely defined by the evolution of technologies. New information and communication technologies find applications in education very quickly, but the efficiency and effectiveness of their use is not always obvious. One of the latest innovations in the technology of e-learning is the use of social networks (SN) for the creation and distribution of educational content and organization of communication of teachers and students. Orientation of the younger generation of students in the regular use of the SN in their daily, academic and professional life casts doubt on the prospects of the development of traditional learning management systems (LMS) (Dan Pontefract, Richard Culatta 2009). Various experience in the usage of SN education has accumulated and analyzed in recent years in the world (Dabbagh Kitsantas, 2012; Bogdanov, Limpens, Li, El Helou, Salzmann, Gillet, 2012; Meishar-Tal, Kurtz, Pieterse, 2012). But these studies don't cover the experience of educational institutions of the CIS countries in the use of SN in training. Therefore, the aim of this article - is to identify the relationship of Russian students and teachers to the possibilities of use LMS and the SN in learning, the merits of advantages and disadvantages of these two different technologies.

2 METHOD

In this study, using survey data on "E-learning technologies in high school" (May 2014), in which were 363 participants: 90 teachers and 274 students from 25 universities of the Russian Federation, Ukraine and Kazakhstan.

The research includes survey, statistical data processing, content analysis and comparative analysis of the results. For data collection were used Google Forms, and for their processing - specialized software «Statistica v6.1.Ru». On basis of the survey results there were constructed table of relative (%) and absolute (quantity) frequencies, contingency tables (cross tabulations). The survey results were compared in MS Excel. To conduct content analysis was used Wordstat v1.1.

For the research there was developed a survey with 68 various questions: with single- and multiple choice, in an open form (essay). The survey was available on open access and transferred to respondents through social networks, LMS and e-mail. The survey was offered to students and teachers who had learning experience in LMS and / or SN.

3 RESULTS

First group of questions is directed on gathering

general information about the respondent (higher education institution, department, age, gender, student / teacher), on indication of the experience of LMS, SN use and on evaluation preferences in the use of ICT in learning.

Second group of questions is directed on comparison of various ways of learning process organization (in a classroom, in LMS, in SN) in 12 criteria. The questions of exactly this group in our research enable to reveal the relation of students and teachers to various ways of e-learning organization and to compare it to traditional face-to-face education. Despite the fact that learning in the classroom, in SN and in LMS are different forms of interaction for students and teachers, we tried to find common criteria for comparing these different ways of learning. In the survey, respondents ranked learning in a classroom, in SN and LMS in each of 12 criteria from 1 to 5 ("1" - low rating, "5" - high rating). So, in their ranking respondents compared learning in a classroom, SN and LMS in each criterion. This approach enable to reveal rating of e-learning technologies in the context of the educational experience of the respondents, including traditional face-to-face education.

In the first group there were analyzed the answers to the following questions:

1. If in the teaching situation you necessarily need to use only one of the two platforms, which one will you choose?
2. If you do not want to use LMS training, what are the reasons?
3. If you do not want to use SN training, what are the reasons?
4. Explain your preference for a particular platform (LMS, SN, other websites)?

To the question "If in the teaching situation you necessarily need to use only one of the two platforms, which one will you choose?" are the following answers (in percentage of the total quantity of responses in each group):

Table 1: Preferences of students and teachers.

	Teachers	Students
SN	39%	50%
LMS	39%	19%
Other	11%	6%
No answer	11%	25%

The majority of students made higher evaluation of SN, but teachers made equal evaluation of both tools.

Questions are directed to identify the factors affecting the assessment of users:

- If you do not want to use LMS training, what are the reasons?
- If you do not want to use SN training, what are the reasons?

Different answers were offered to both questions. Respondents could choose several variants. The answers are given in percentage of the total quantity of responses in each group.

Table 2: For what reasons do not use LMS.

	Teachers	Students
You have to learn how to use	7%	9%
Platform is inconvenient / unusual	11%	16%
Use takes time	18%	3%
Use other platform	10%	10%
Classic methods of teaching are enough	10%	14%
No answer	54%	53%

In both groups the majority of the respondents refused to answer this question. The main reason for teachers - it takes a lot of time to use this platform. It is explained by necessity of developing a large number of materials, including not only the demo, but also tests, independent tasks and general evaluation system. For students the most important factor is the strangeness / LMS inconvenience and time spending is less significant. Also, there are differences in the evaluation of classic methods of teaching: great amount of students adhere to them. Almost all respondents know this platform: lack of LMS knowledge or lack of experience in it said only 1% of the teachers and 2% of the students. In the free response, some teachers pointed less opportunity of communication, *"the students are used to networking in an informal way (closer to the logic of MOOC), I'm afraid that Moodle will be perceived by them only as a checking element of "accountable" learning experience."* In the free response, students also pointed the lack of interactivity, *"like a dead LJ"* (approx. author Blog Hosting "Live Journal"). Students also pointed technical problems *"cannot always go to the website"* and expressed doubts about its effectiveness as an educational tool: "Students do not check themselves, but just looking for answers on the internet and write down there."

Table 3: For what reasons do not use SN.

	Teachers	Students
You have to learn how to use	2%	1%
Platform is inconvenient / unusual	2%	2%
Use takes time	4%	12%
Use other platform	8%	10%
Classic methods of teaching are enough	3%	3%
No answer	76%	68%

In both groups the majority of the respondents refused to answer this question. Teachers did not identify significant shortcomings of the system itself, but pointed the self-sufficiency of classic methods of teaching. Students say about spending a lot of time on using of this platform. It can be explained by the fact of inclusion here personal communications, in which it is necessary to be involved, inspite of educational process. Teacher's comments: *"social network focused on free communication, and are not focused on learning"* and students': *"I want to divide private and educational space", "I do not want to see me online"* support this hypothesis. In general, both groups made evaluation of SN use, in the free response 6% of the respondents pointed the reasons of non-use instead of use of this system: *"I want to use / want and use"*, etc.

At the end of the survey it was presented open-ended questions: Explain your preference for a particular platform (LMS, SN, and other websites). This article considers the responses, referring only the LMS (all answers were given about LMS «Moodle») and SN (most replies mentioned network "Vkontakte"). This question was answered by 34 (38%) teachers and 76 (27%) students. In these responses there were those who are not substantively relevant, for example, *"do not know", ")", "Moodle", "social network"*, etc. The method of analysis used in this step - content analysis. As the unit was selected a block of text containing one explanation (reason, merits and demerits) preference of a particular system. Next units were grouped into categories according to semantic criteria. The results are given in percentage of the quantity of responses. Teachers pointed advantages and disadvantages of LMS.

Table 4: Advantages of LMS (teachers).

Organization of educational process	32%
Integration of University	6%
No distraction information	3%
Student and teacher communication	3%

Teachers point the great opportunities in organization of educational process as the most important advantage of use.

Table 5: Advantages of LMS (students).

Organization of educational process	18%
Student and teacher communication	7%
No distraction information	3%
Ease of use	3%

Students also pointed the advantage of LMS in the educational process. It should be pointed out that the semantic categories, in this part of the study, are virtually identical in both reference groups. In the group of students is added only one category of "ease of use".

As disadvantage of LMS Moodle, teachers complain about binding registration with the help of an administrator.

Table 6: Disadvantages of LMS (teachers).

Registration with administrator	9%
No integration into the general development strategy of the University	3%
Can't be used in several universities as a single course	3%
Unfriendly interface	3%
Communication student and teacher	3%
Technical problems	3%
Duplication necessity of information in SN	3%

The students pointed lack of system functionality as disadvantage.

Table 7: Disadvantages of LMS (students).

Shallow functionality	9%
Unfriendly interface	3%
Unusual	3%
Technical problems	1%
Need to use browser	1%

Concurrent categories for students and teachers are "Unfriendly interface", "Lack of communication possibilities of the teacher and the student", "Technical problems in use." Unmatched categories of teachers are mainly associated with the organization of educational process: "Need to registrate with the administrator", "No integration into the general development strategy of the University", "Can't be used in several universities as a single course", "Duplication necessity of information in SN (either due to technical problems or more efficiency of work)." Students pointed disadvantages of the system: "The lack of functionality", "The need to use browser" (the absence of convenient mobile application), "Unusual platform."

Both groups also commented on the advantages and disadvantages of the use of SN. In advantages the teachers say, first of all, the fact that SN - a place where students are and you should "go for them." It is also pointed the general availability and user-friendly interface of SN, a great amount of available information.

Table 8: Advantages of social networks (teachers).

Students environment	29%
General availability	9%
User-friendly interface	6%
More info	6%
More motivation for students	3%
Organization of educational process	3%
Equal rights for students and teachers in the creation of the content	3%
Efficiency of communication	3%

For students the significant factor is communication, the benefits of leading is the category "Efficiency of communication", "The ability to communicate with other participants," as advantage is "Convenience" and "Habitualness of the system."

Table 9: Advantages of social networks (students).

Efficiency of communication	18%
Regularity	15%
Communication with others	13%
Convenience	9%
Mobile applications	7%
Dialogueness	4%
More information	3%
Organization of educational process	3%
User-friendly interface	3%
Upgrade	1%
Availability at any time	1%
Pastime	1%

Categories of teachers and students agree about more information, more opportunities for the organization of training activities and efficiency of communication. At the same time, students are significant categories of communication, regularity / convenience and technical capabilities of the platform. And for the teachers the most important category - subject-subject communication, that is the teacher - student (on-line student, increasing the motivation of students, equal rights for student and teacher in the creation of content). In this case it is possible to say about "communicatively oriented" students and "student-oriented" teachers.

Categories of teachers and students in the assessment of the shortcomings of social networks as a tool for the educational process are not the same. Teachers noted the need to prepare for working with social networks, as well as openness to learning materials. Students see the flaw in the presence of distracting information from school, lack of proper information and training necessary to be online, which would require entry into the personal communication.

Table 10: Disadvantages of social networks (teachers).

Need practice	3%
Public display	3%

Table 11: Disadvantages of social networks (students).

Many distractions	7%
Few educational information	1%
Everyone can see online	1%

Second group of questions is directed on of LMS and SN in 12 criteria. To get objective assessments in the analysis, we took into account only the answers of respondents who had experience in the LMS and the SN: 36 teachers and 141 students.

Table 12: Evaluation of LMS and SN.

	Teachers			Students		
	Higher in SN (%)	Higher in LMS (%)	Equal in SN and LMS (%)	Higher in SN (%)	Higher in LMS (%)	Equal in SN and LMS (%)
Motivation	11	56	33	42	16	42
Concentration	11	50	39	41	38	21
Convenience of the system	50	22	28	55	14	31
Efficiency	50	50	0	63	9	28
Frequency of communication	78	5	17	57	15	28
Informativeness	22	22	56	45	21	34
Interactivity	39	17	44	47	14	39
Personalization	61	17	22	45	16	39
Convenience of communication	39	28	33	41	22	17
Cooperation	50	0	50	74	3	23
Understanding	28	0	72	43	14	43
Emotionality	56	0	44	52	11	37

The majority of students made higher evaluation of SN in 10 criteria and only in the criteria of "Motivation" and "Understanding" the same quantity of students think that the possibilities of LMS and SN are equal. Students made high evaluation of LMS in the criteria of "Concentration" (38%), but even here the majority of respondents made higher evaluation of SN (41%). Evaluation of teachers differ. They suppose the SN are inferior to LMS according to motivate opportunities and students' concentration. For the rest of criteria the teachers either make higher evaluation of SN, or make equal evaluation of LMS and SN.

4 DISCUSSION AND CONCLUSIONS

It should be pointed out that both reference groups show similar activity in the responses. In their free responses both teachers and students to a greater

extent presented the advantages of a particular platform. Thus, teachers equally consider the use of LMS and the SN as a tool for learning. They attribute the advantage of this system in the educational process: the arrangement of materials, development of tests and tasks, the organization of students' independent work, preparation of the assessment system, work with the journal, activities monitoring, etc. However, they voice concerns relating for the time-consuming when using this platform, and do not accept the system of compulsory registration by the administrator. Social networks, according to teachers, may be selected as a learning tool mainly because the platform for students is usual and every-day. It is also important the general availability of network and the ease of use / convenience of interface. There were not obvious disadvantages of SN which were presented in the responses.

It is obvious that none of the technologies does not meet all the requirements of the teacher in the e-learning process. Some functions (technical, supervisory, organizational) has been successfully implemented using LMS, others (communication, motivation, individualized instruction) - the SN. Thus, from the teachers' point of view, the prospects for the development of e-learning technologies are related, probably, not with the choice of either SN or LMS' contradistinction, and their hybridization (appearance of a new technology that combines the functions of the SN and LMS) or symbiosis (coexistence of the two systems, with which both partners or one of them gets benefit from the other).

Students, to a greater extent, prefer to use SN, considering the main advantage of the communicative potential of the platform, as well as its convenience and regularity. In this case disadvantage is a lot of distractions. Students also admit the advantage of LMS in the educational process, but attribute shortcomings of the platform in its lack of functionality, inconvenience and strangeness. Thus, the Russian students tend to attribute the prospects for the development of e-learning technologies more in social networks than in traditional LMS.

For further development of the research we aim to check the data collected in Tomsk State University using survey and interviewing of students and teachers from other foreign universities. In our opinion comparison of students and teachers in their relation to the e-learning instruments in different universities and countries enable to examine the results by interaction of more respondents to the research, to define perspective directions of e-

learning development taking into account opinions of its participants.

Conclusions of this study will help us to understand and improve our use of LMS and SN tools in educational contexts. Our final goal is to adapt our teaching strategies to the educational needs of our students.

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