

CHAPTER I.

Innovative Educational Technologies, Tools and Methods for E-learning

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Scientific Editor Eugenia Smyrnova-Trybulska
“E-learning”, 12, Katowice–Cieszyn 2020, pp. 15–28
DOI: 10.34916/el.2020.12.02



THE MOODLE COMMUNITY PLATFORM VERSUS THE MICROSOFT TEAMS CORPORATE APPLICATION

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Abstract: *The aim of study was to identify trends on the LMS's and e-learning industry's market in the context of students' and academics' needs in regard to distance education. Features and capabilities of the Moodle and Microsoft Teams platforms for distance education and networking purposes were analyzed and also the 5119 questionnaires conducted among the Cracow Pedagogical University students participating in distance education. 3167 questionnaires were conducted between 18th and 21st March 2020, another 1927 between 26th May and 7th June 2020, and a group of 25 students enrolled in Culture and Media Studies course completed questionnaires between 1st and 18th June 2020. The results of the research indicated that Moodle platform is better protected from unauthorized access. MT is more attractive regarding to video meetings system, but working with MT is absorbing, stressful and exhausting especially for the tutor, because MT is inscribed into corporate practices, and is dominated by visual and synchronous communication. When it comes to testing knowledge, 37% students preferred Moodle, 22% – MT, while 41% – other. Moodle refers to university traditions, while MT – to culture of corporate co-operation and uniformity. Regulations should not aim at pleasing students' by attractive tools, but should safeguard the good quality of distance education.*

Keywords: e-learning industry market; corporation; attractiveness; video meetings; regulations.

INTRODUCTION

Currently, the digital learning environment in Poland is based mainly on the Moodle (Modular Object-Oriented Dynamic Learning Environment) or on Microsoft Teams (MT) platforms. Despite their educational orientation, those platforms use different communication channels and tools. That is why, they influence teaching processes, students' soft competences and social contacts differently.

The Moodle platform and Microsoft Teams application are frequently utilized during the COVID-19 pandemic for distance education purposes. The Moodle is an open source platform installed on university or school servers, licensed by the GNU, free to use and designed for use in education. In 2015, it was the most popular LMS, endorsed by Moodle Users Association. In contrast, MT is an application created, managed and retailed by the Microsoft, designed for corporation use, and based on the Microsoft 365 platform. It used to be a component the Office 365 package. However, because of the current pandemic, from 11th March 2020 till 2021 companies, schools and private individuals can access it free of charge. Both teaching platforms have in-built videoconferencing, chats, archiving, file exchange, and tests options. Each of these applications differently shapes user's soft competencies, and otherwise forms: collective awareness, attitude to cultural environment, time management, generation of information, attitude to corporate ideology, and evaluation of cognitive capitalism. They also differently approach issues regarding user's privacy. The expansiveness of Microsoft Teams positively correlates with students' and tutors' fatigue. The impact of prolonged use of those applications on students was studied by analyzing questionnaires obtained from 5119 students.

1. AIM, HYPOTHESIS AND METHODS

The aim of this study was to identify trends on the LMS's and e-learning industry's market in the context of students' and academics' needs in regard to distance education. To this end, the features and capabilities of the Moodle and MT platforms used in schools, at universities, and by other institutions and workplaces for distance education and networking purposes were analyzed. The following hypothesis was formulated: *the Moodle platform is more useful in distance education, because the MT application, despite having attractive visual communication features, has many features of a corporate tool and thus is less adequate for tertiary level education.*

2. RESEARCH MATERIAL

The functionality of both platforms, up to date research and information on those were analyzed. The 5119 questionnaires conducted among the Cracow Pedagogical University students participating in distance education during the COVID-19 pandemic were also analyzed. 3167 questionnaires were conducted between 18th and 21st March 2020 in the purpose to describe and try to capture the impact of the coronavirus pandemic on the life and functioning of Krakow youth (Długosz, 2020a), another 1927 between 26th May and 7th June 2020 in the purpose to describe the impact of the coronavirus pandemic on the life and functioning of students (Długosz, 2020b),

and a group of 25 students enrolled in *Culture and Media Studies* course completed questionnaires between 1st and 18th June 2020 in the purpose to examine the quality of distance learning (Stoch, Kosek, 2020). The results showed that 89% of Pedagogical University students were enrolled in classes delivered via the Moodle platform, while 80% in those delivered via MT platform (Długosz, 2020b: 35).

Thus, the obtained results, assessments and conclusions are based on surveys carried out by other people for other purposes, but also on internet sources and the author's own experiences.

3. LIMITATIONS

The questionnaires were conducted among students from one university; therefore, conclusions cannot be generalized. However, the results show trends in the evolution of educational tools, of the LMS market and e-learning industry, as well as the needs of students', and lecturers' working patterns.

4. RESULTS

4.1. Similarities

Both platforms allow the tutor and participants to upload educational materials such as films, audio recordings, video meetings, multimedia presentations, graphics and animations. Both platforms allow for test preparation, chatting, transferring files, messaging, and archiving. Both platforms are available in mobile versions and can operate in the Cloud. Both platforms can be accessed anytime, anywhere.

4.2. Differences

4.2.1. Creators

The Moodle platform is co-created by its users. It is endorsed by Moodle Users Association and financed by crowdsourcing. By contrast, MT is a commercial product of the American technology company – Microsoft, the designer and owner of Microsoft Windows, the Microsoft Office suite and the Internet Explorer browser. In terms of accumulated capital, Microsoft ranks third on the list of the U.S. public companies, after Apple and Amazon.

4.2.2. Popularity

The Moodle platform has been used e.g. by Open University (UK) since 2005, i.e. it is a platform with a long teaching tradition at a tertiary level. In 2015, Moodle with an estimated 73.8 million users was probably the most popular LMS system, followed by Edmodo and Blackboard (Pappas, 2015). In 2020, the LMS was used by educational providers delivering over 26 million registered courses and accessed by 212 million users from 242 countries (Moodle.org). USA, Spain, India, Mexico, Germany, Brazil, France, Russian Federation, Indonesia and Colombia have the highest number of registered Moodle users.

In the ranking of the most popular course management systems called *Top learning tools* (2019) prepared by Jane Hart, the Moodle platform occupied the 50th position;

dropped 8 places during the year. The application was in the 16th position as a higher education educational tool, and in the 44th position as a workplace training tool. On the other hand, Microsoft launched MT in March 14th, 2017 as a fee-charging corporation networking tool. In *Hart's* ranking of the most popular team collaboration platforms (2019), MT was placed in the 11th position – it moved up 16 positions during that year. It ranked 5th as a workplace learning tool, preceded by PowerPoint, Google Search, YouTube and MS Word. But as a personal and professional learning tool it came 20th, and as a higher education tool – it was 34th.

However, after the tool was adapted for distance education and made available free of charge during the COVID-19 pandemic (Tur, 2020), 31 million new users (increase of 70%) accessed it within first 6 weeks. It has been accessed by up to 75 million users per day, and up to 200 million people accessed the MT platform per day to participate in meetings. MT was utilised by over 183 000 educational institutions (Protalin-ski 2020). From 2021 onwards, however, free access to MT will cease. Employees, primary and secondary school students, university students, teachers, lecturers and tutors who in the meantime have familiarized themselves with its functions and have saved some data on the OneDrive Cloud would be the ones likely to continue its use.

4.2.3. Costs of use

Downloading and using the Moodle platform will continue to be free of charge. Free access is possible as the platform is operated as an open source software under the GNU General Public License and copyright. Therefore, it can be accessed, distributed and improved by the users.

On the other hand, the fee for using MT is calculated depending on chosen functions and ranges from US\$5 to US\$20 per user (Microsoft). Educational version of Office 365 A1 which comprises of Outlook, Word, Excel, Power Point, One Note, Teams, Stream and other is free for download (Microsoft, 2020b).

4.2.4. User's privacy

Data posted on the Moodle platform are mainly saved on servers owned by the school, university or other educational entity. Therefore, it is protected from unauthorized external access and the collected data is not processed or sold by corporations. Open source software guarantees transparency of the operational system, allows introducing additional security features hence does not allow sharing information about users. Permanently deleting data is possible in the case of this platform.

In contrast, documents posted on the MT platform are saved along with user's telemetric data on OneDrive Cloud, i.e. on servers owned by Microsoft. The corporation keeps copies of all deleted documents (except videos) in so called bin even after the user had deleted them; it is worth saying that deleted documents say a lot about a user. Figure 1 shows a pop-up window containing information that documents deleted on computer are still saved in the OneDrive.

Saving data on students' progress on OneDrive is inconsistent with the intention of the ministerial ordinance: "Feedback on distance education students' progress should be stored at university's distance education platform or other tool designated for this purpose" (Ministry of Science and Higher Education, 2020, p. 4). Meanwhile, intro-

ducing MT to over 183 million educational institutions and facilitating over 34 million teleconferences, teleconsultations and healthcare meetings, Microsoft collected and saved on OneDrive lots of highly sensitive information. It is worth noting that the Microsoft has been following users of paid Office 365 suite and downloading titles of their private emails. That is why in 2018, due to unauthorized disclosure of telemetric data and private information about students and tutors, German province Hessen banned the use of the Microsoft's software in schools (Interia, 2019) "because the Microsoft suite's cloud storage and telemetry collection are not in line with the EU's General Data Protection Regulations" (Oates, 2019). Chinese authorities ordered that all foreign PCs, hardware and operating systems used by state offices and institutions are to be replaced till 2022 (Cuthbertson, 2019). Nonetheless, corporate MT software does not allow to establish source code. It has in-built automatic update system which sends reports on the software owned by the user of the Microsoft product. The user of Microsoft sites is also prompted to share their location, which is not the case with the Moodle platform.

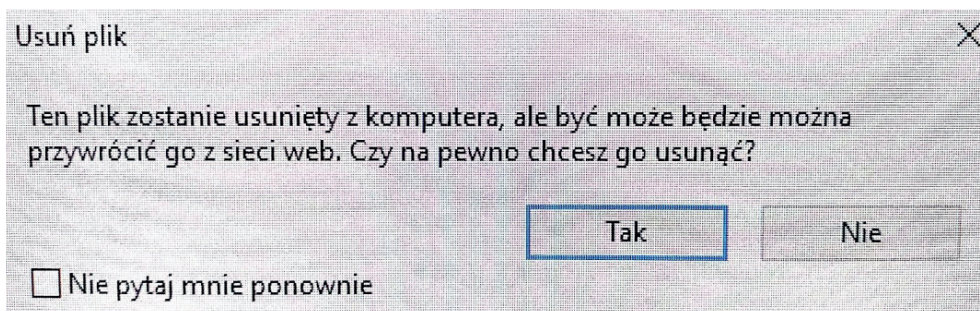


Figure 1. MT – information: „Delete file / This file will be deleted from your computer, but you will be able to restore it from the web. Are you sure you want to delete it? / Yes / No / Don't ask me again”

Source: scan by A. Ślósarz.

When it comes to conducting tutorials and examinations by the use of MT, students should be asked to provide consent to process their personal data and should be presented with the list of entities which would have access to this data.

4.2.5. Inter-connected applications and services

Both applications are inter-connected with e-mail box. In the case of the Moodle platform, this is the e-mail address provided by the user. MT service, on the other hand, uses e-mail address which was provided to the user as a part of the Office 365 suite alongside other programs, as shown in Figure 2.

With each consecutive click, Microsoft opens: Class Notebook, Dynamics 365, Calendar, Staff Notebook, Delve, Kaizala, People, Power Apps, Whiteboard. In addition to those, 571 apps, bots, and assistants are available in the *Applications* tab. In this way, MT became a tool for promoting several hundred Microsoft products.

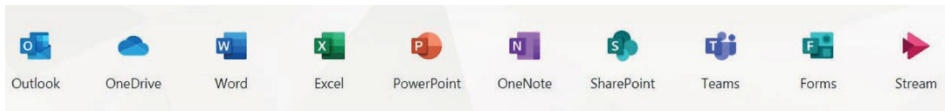


Figure 2. A set of applications inter-connected with MT

Source: scan by A. Ślósarz.

4.2.6. Attractiveness

In 2015, surveyed students reported that LMS's functionality was deficient because the platform lacked: *live and video conferencing options* (38%), *mobile learning options* (27%), *gamification* (22%) and *social learning options* (20%) (Pappas, 2019). Therefore, BigBlueButton i.e. Web conferencing system designed for online learning, has been made available on the Moodle platform. On the other hand, Microsoft edited the MT service to meet educational market's needs. During pandemic, teachers who were not prepared to conduct online education sessions opted for MT and often limited their teaching sessions to video meetings and marking written assignments. It is important to note that 50% of students find "showing themselves and their surroundings to the camera stressful" (Długosz, 2020b, p. 42). In addition, real-time video communication has not proved to be synonymous with social presence which gives one a sense of physical and emotional intimacy, builds trust and increases satisfaction in chosen course of studies (Cobb, 2009, p. 251). In case of on-line education, social presence is based mainly on sending social signals such as showing interpersonal involvement, maintaining eye contact, using body language and on other non-verbal communication. Thus, it depends on tutor's and students' didactic and technical competences as well as on their engagement in communication; it does not depend just on technology. Showing oneself on the screen in real time is not synonymous with being socially present. Unfortunately, numerous regulations of many universities' which require taking classes in a synchronous mode by the use of the MT service seem to regard those two to be equivalent (Gmiterek-Zabłocka, 2020). Many institutions perceive MT as a way of ensuring contact between students and tutors and therefore MT has become "the favorite didactic tool of academic teachers during pandemic, especially those who have never before encountered distance education platforms" (Urbaniec, 2020).

Students were asked about assessment of distance education. It is worth emphasizing that 19% of them stated that found distance education more effective as compared with attending tutorials in person, and 16% – that it did not affect their study either way (Długosz, 2020b: 41). This means that some tutors and students effectively used their competences and digital teaching tools. They were aware that "interactivity of communication tools can drive social presence and students' satisfaction in online learning" (Park et al., 2020, p. 1).

In contrast, many students asked about minuses of distance learning mentioned excessive amount of study material to work through (68%), lack of direct contact with peers therefore lack of opportunity for group studying (58%), lack of direct contact with lecturers and tutors (57%), and lack of possibility to ask them questions (49%)

as disadvantages of distance education (Długosz 2020b: 40). Therefore, it can be said that some lecturers and tutors treated distance education tools as a one-way communication tools and file transfer utensils. Instead of an environment conducive to learning and collaboration, the lecturers and tutors created a file repository, where they uploaded study materials and student assignments; which is inconsistent with the ordinance of the Minister obliging academic lecturers and tutors to provide students not only with teaching materials but also with activities in the form of exercises, assessment criteria, regular feedback on their learning progress and regular monitoring of their progress (Ministry of Science and Higher Education, 2020: 1–2). Poorly organized distance education may make students to form negative attitude towards it for the future.

Students were asked about preferred methods of learning. The fact that the most of them (48%) preferred classes via MT conducted in real-time, rather than sharing materials prepared by the lecturers and tutors (20%) (Długosz, 2020b: 36) testifies that MT provides them with a illusion of having direct contact with academic team. However, when it comes to feelings related to remote education, the level of weariness caused by distance education turned out to be enormous: 64% of students reported fatigue, 62% – mental exhaustion, 60% – mood swings, and 59% – reduction in motivation to learn (Długosz, 2020b: 42). Therefore, it can be said that all participants, and especially tutor, found video conferencing absorbing, stressful and tiring. Visual communication in synchronous mode develops interpersonal relationships, facilitates oral communication, co-management and integration, but on the other hand it can promote undesirable practices and perpetuate errors. It requires the tutor and participants to be available at a specific time, have access to good quality equipment and Internet connection necessary for video transmission, as well as be in an environment adapted for distance education – quiet, peaceful and aesthetic. It may violate user's privacy due to default recording option. The latter inconvenience can be addressed by turning off the camera or blurring / substituting the background. Therefore, working with MT is absorbing, stressful and exhausting for all participants, and especially for the tutor.

4.2.7. Organisation of education

By default, the Moodle platform automatically sets the hierarchy of the tutor who prepares educational resources and students' who can, however, be active on forums and participate in chats, share documents, edit content of the Wiktionary / the board / journal and jointly develop wiki. It is possible to delegate tutor's privileges to selected students who can e.g. moderate the forum. The democratisation of the educational process satisfies the need for social learning. However, at the same time it poses a threat to the quality and value of knowledge being shared. Therefore, any changes to the default hierarchy are to be made by the tutor, who takes into account their educational impact. The Moodle platform promotes written and asynchronous communication processes, which requires the tutor to invest additional time, but allows students to work at a time convenient for them and protects their privacy.

For comparison, MT is inscribed into corporate practices, and is dominated by visual and synchronous communication. Therefore, the hierarchical management model

has been transformed into Rensis Likert's democratised, participatory and multidirectional IV model back from 1967 (Dobek-Ostrowska, 2007). Everyone – under discretion of a person chairing the meeting which is the default MT's setting – can speak, show themselves on screen, make their computer's screen visible to all participants, send and receive documents because such a model of organisational communication turned out to be the most desirable, flexible, and tolerant of changes and chaos. The European Union obliges enterprises to involve employees in decision-making processes (European Parliament, 2002). However, MT service is not a system suitable for a large number of users, for sessions including power relations and for educational communication in which the role of tutor is clearly defined.

The Regulation of the Ministry of Science and Higher Education obliges lecturers and tutors to use teaching methods which incorporate synchronous or asynchronous interactions (Ministry of Science and Higher Education, 2020: 1), the choice is up to the lecturer/tutor and the students. In the Institute of Polish Philology, 38% of students preferred asynchronous classes characteristic of the Moodle platform, only 8% – synchronous – characteristic of MT, 21% – had no preference (Stoch, Kosek, 2020: 4). Students asked about choosing preferred way of distance learning (synchronous or asynchronous) explained their preferences for asynchronous classes e.g. by:

- *Asynchronous are better for me because I find it easier to concentrate and to organize my time; I think that zoom learning is a worse option for visual learners like me.*
- *The synchronous form is more mobilizing, although there might be some problems; for example some students had to go to work at the session time, and there were also some technical problems.* (Stoch, Kosek, 2020: 5).

When it comes to testing knowledge, 37% students asked about the most effective tool preferred Moodle, 22% – MT, while 41% – other. The preference for Moodle was explained, among others, as follows:

- *The most effective for me are tests available through the Moodle platform; being time-limited, they verify our true knowledge under time pressure; it is much harder to search for answers in the materials on hand.*
- *Moodle is the best because it sets time limits, let you know the correct answers, and is easy to follow.* (Stoch, Kosek, 2020: 15–16)

These statements show that for 37% of students the Moodle platform is better suited for teaching and examination purposes than MT. It can also be used for conducting final examinations – the ministerial recommendation allows such to be held as part of synchronous online contact via “video conferencing, internet conferencing, remote teaching platform and other tools designed for synchronous group work.” (Ministry of Science and Higher Education, 2020: 4). Therefore, university chancellors' regulations which order to save final examinations' video recordings on MT, especially when the university owns a platform are controversial. Live streaming usually puts participants under additional stress, may be associated with some technical problems and violates user's privacy. Therefore, there is an urgent need for universities to review their final examination procedures, allow remote option of such, and to ensure safe storage of student's personal data, their pictures, their ID numbers and the

pictures of their ID which they show to the camera on university servers and not on Microsoft's (Świder, 2020).

4.2.8. Graphic design

The Moodle logo refers to university traditions (see Figure 3), while MT – to culture of corporate co-operation which is symbolised by its logo placed in front of uniformed employees icons. Their silhouettes have been reduced to the letters of the alphabet: j, i. This means that corporate employees are deprived of individual features and turned into company elements (see Figure 4).



Figure 3. Moodle logo

Source: Moodle, https://moodle.org/pluginfile.php/2840042/mod_page/content/23/Moodle-Logo-RGB.png (accessed 10.07.2020)



Figure 4. Microsoft Teams (MT) logo

Source: Wikipedia, https://pl.wikipedia.org/wiki/Microsoft_Teams (accessed 10.07.2020)

The graphic design of the Moodle platform enhances communication by visually organising available materials and exercises. On the other hand, MT, by the use of graphics, promotes corporate technological solutions, own products, multiculturalism and implements user-specific affective control which are frequently used by corporations. Figure 5 shows MT's chat icon found on the main site, while Figure 6 shows its user's assignments icon.

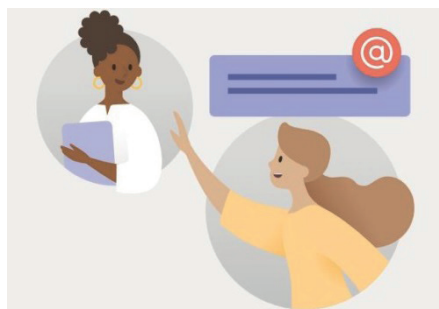


Figure 5. MT chat graphics

Source: Scan by A. Ślósarz.



Figure 6. MT assignment graphics

Source: Scan by A. Ślósarz.

Smiling chat participants serve as a workplace emotions influence tool. Oppressive non-verbal expression and body language induces desired emotional response in clients and employees. It also triggers positive attitude to the tasks to be performed. Hence, in Figure 6 there is a smiling emoticon on the box filled with tasks. However, an intense emotional work often causes psychological exhaustion e.g. stress, depression, and burnout (Szarecki, 2012: 96).

Figures 4, 5, and 6 which are specific to a corporate culture failed as educational tools during COVID-19 pandemic. Large proportion of students already tired of remaining in isolation and overloaded with assignments developed psychosomatic symptoms which intensified as the pandemic continued (Długosz, 2020b: 23–28).

4.2.9. Active and passive functions of application

Moodle allows the lecturer and the users to: format and post documents and entries, send files, determine ways of communication e.g. via chats or forums. The application opens after the user types the URL address in the browser and logs in (or activates the smartphone version of the application by tapping the icon); logging out closes the application. Therefore, it is the user who decides about the time and duration of their work.

On the other hand, MT in addition to the above also performs some actions automatically: it is the first to open on the screen, it appears in the taskbar, it has a built-in chat option, does not require logging out and remains active 24 hours a day. Messages can be sent with sound reminders sounding every 2 minutes for 20 minutes. Therefore, MT is mainly an audio-visual application, it dominates other programs and user's other activities. In this way, *bodily colonisation of a person working in a corporate culture* occurs (Szarecki 2012: 94). It is no wonder then that the majority of questionnaireed students were *fatigued by distance education* (Długosz, 2020b: 41–43).

4.2.10. Shaping soft competences and collective awareness

Both presented applications differently shape person's soft competencies. After Niall Sclater we can say that the Moodle and a number of other LMSs are *relatively pedagogy-neutral and are merely shells in which to put content and activities* (Sclater, 2015). The Moodle develops in a user a systematic and critical approach to their own work and to educational materials. If the tutor competently organises classes, it also trig-

gers cooperation and joint knowledge creation on a forum, in a dictionary or in wiki. Elements of gamification are available: displaying names of best performing students, providing badges, giving praise, etc.

For comparison, MT requires strict observance of session times, collaboration and formalisation of information preparation sessions and students' management, uniformity expressed e.g. in addressing participants by their first name and surname preceded by „@“, which guarantees that the message will be sent as e-mail to the chosen person. Thus, corporate ideology and cognitive capitalism values are being consolidated in collective consciousness e.g. cult of the digital technological revolution / intellectual work / international economic flow as a expression of global capitalism / rebellion against the state-economic order (Ratajczak, 2015: 58–59).

According to Peter L. Berger and Thomas Luckmann (1966), knowledge is derived from social interactions. Therefore, education institutions and corporations are equally important for generation of students using MT as part of their education.

CONCLUSION AND RECOMMENDATIONS

The hypothesis stating that *the Moodle platform is more valuable for distance education, because the MT application, despite having attractive visual communication features, has many features of a corporate tool and thus is less adequate for tertiary level education* has been confirmed. To this confirmation leads a comparison of their creators and owners, interconnected applications, costs of use, user's privacy treatment, organization of education, graphic design and the shaping of soft competences. The functions of both the Moodle and MT platforms are useful in e-learning. It is, therefore, advisable to base distance education on an educational platform which enables video communication in real time. The best solution is Moodle platform with options such as interactive visual contact in real time, and possibility of saving recordings on university's server. This enable secure storage of registered resources, and allow users to easily collect, search, share, upload and access those.

On the other hand, MT service failed to enable direct, real-time communication. Academics still have to develop suitable forms of their social presence in distance communications. To facilitate that, it is necessary to study the quality of distance lectures and tutorials. should not aim at pleasing students' or lecturers'/tutors' by recommending use of attractive tools, but rather should safeguard good quality distance education. Therefore, directives to prepare high-quality distance education sessions gained increased importance during current pandemic (Kędzierska et al., 2015; Association for Academic E-learning 2008).

ACKNOWLEDGEMENTS

The work presented in this paper has been supported by the funds obtained for statutory research within *Social Communication in the 20th and 21st century: linguistic, socio-cultural, media, political and legal aspects* project (Research Project № 8).

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