

ORIGINAL SCIENTIFIC PAPER

Attitudes and Preferences of Students in Sports Science Concerning the Use of E-Learning and Social Media at the University of Novi Sad

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Abstract

Using e-learning and social media has become a common part of students' academic lives in many sciences, including sport sciences. The purpose of this research study was to identify attitudes and preferences of students in sports science concerning the use of e-learning and social media at the University of Novi Sad. The present study was included respondents (N=297) from the Faculty of Sport and Physical Education at the University of Novi Sad from all levels of studies. The attitudes and preferences of the use of e-learning and social media were measured with three separate parts: (1) General information (8 items); (2) use of different genres of social media in teaching (28 items); (3) e-learning in the field of sports studies (13 items), and descriptive statistics (frequencies) were used to describe the basic features of the data. The results showed that participants mostly use Facebook (44.4% of students), Viber (66%), and WhatsApp (56.6%) to contact peer students for study in the context of learning purposes. In comparison, they do not use LinkedIn (1.3%), Twitter (0.3%) or Skype (4%). From another side, the students mostly share their messages via Viber and WhatsApp in the form of various questions (67% via Viber; 62.6% via WhatsApp), video messages (20.5%; 25.3%), screenshots of their screen (21.2%; 27.6%), various links (23.2%; 25.3%), comments on a current topic (22.2%; 22.2%). In the participants' opinion (81.5%), the teaching process has been set back by the coronavirus pandemic. In contrast, the students experienced the pandemic's positive effect as an improvement in e-learning (51.2% of students). They shared the opinion that virtual teaching is not as effective as traditional teaching (85.2%). The theoretical and practical applications of these results are discussed.

Keywords: *higher education, blended learning, digital technology, social networks, students*

Introduction

University education in sports sciences provides students with the opportunity to be active in research and innovation throughout their studies (especially at higher levels of study) and, thus, have a direct opportunity to, together with their teachers, contribute to the development of sports technologies and physical education methods, as well as to improve sports diagnostics and prevention.

Parallel to the development of the World Wide Web

(WWW), digitally supported media in teaching and learning (e-learning) have taken a very important place in many fields of studies (Ruiz, Mintzer, & Leipzig, 2006; Isidori, Frias, & Echazarreta, 2015; Liu, Huang, & Hsu, 2015). However, in the field of sports sciences, resistance to the application of new technologies has long been evident, especially because the teaching in this academic field was frequently conducted in gyms and students and teachers preferred the "manual way" of learning and teaching (Kinchin & Bryant, 2015). However,



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over time, the situation has changed, especially as new technological possibilities have emerged that have significantly improved both theoretical and practical teaching (Manca & Ranieri, 2016).

Today, digitally supported media in teaching and learning (e-learning), in addition to face-to-face lectures, are used as “blended learning”, one of the most innovative methodologies in education (Al Awamleh, 2020). For this reason, approaches to learning and teaching are changing rapidly, and universities around the world are now implementing and investing in a virtual learning environment that paves the way for blended learning to take a leading role in higher education management systems, which is not surprising because students in all academic fields highly value e-learning as a modern way of education. For sports sciences, e-learning has proven to be an important support for the transfer of knowledge about certain theoretical and practical knowledge, based, for example, on on-line learning management platforms for better supply and distribution of digital tools (Olesov, Sergin, Alekseev, Nikiforov, & Baishev, 2020).

Although students in sports sciences were slightly behind their colleagues in technical and natural sciences if the level of use is measured in front of the mentioned tools, due to the lower level of technical knowledge but also due to traditional aversion to it, the new circumstances caused by the pandemic led them to adapt and adopt new knowledge and skills (Olesov et al., 2020; Vukovic et al., 2021). Therefore, further research analysis is needed to adequately monitor the development of this area within the aforementioned population, mostly because few scientific publications have published recent research in this context. Furthermore, another form of digital tools has also entered the academic world in recent years, with the use of social media for educational purposes (Kinchin & Bryant, 2015; Rigamonti et al., 2020).

There is a wide variety of studies reporting on the use of tools among students and teachers for communication and teaching purposes by integrating these tools into different course settings (cited in Rigamonti et al., 2020), and this research study has specifically addressed this issue in sports sciences, especially (as previously stated) because there are certain assumptions that there may be certain deviations in the aforementioned area from other areas of education.

The sport sciences span a range of subjects in research and education, involving many issues that impact various areas that are central to contemporary societies (Popovic, Matic, Bjelica, & Maksimovic, 2020). For this reason, they may profit from new forms of communications and distribution of knowledge by the use of contemporary digital media (Matic, Popovic, Maksimovic, Bjelica, & Vukovic, 2020). Knowing about social media and digital learning preferences can be valuable when planning to promote international educational courses in sports sciences or academic collaborations, as preferences for using certain digital tools may differ between nations and cultures (Rigamonti et al., 2020).

As few scientific publications could be found in this context, the purpose of this research study was to identify attitudes and preferences of students in sports science concerning the use of e-learning (with a special focus on the professional development of staff in technology-enhanced learning) and social media at the University of Novi Sad (with a special focus on different genres, especially focusing on social media writing).

Methods

The data were collected from 297 respondents (174 male (58.6%) and 123 female (41.4%)) from the Faculty of Sport and Physical Education at the University of Novi Sad. Most of the students were the students at the bachelor level (271 students (91.2%)), while the rest were at the master (12 students (4.0%)) and doctoral levels (14 students (4.7%)). It is also worth adding that the majority of respondents pointed out that they have constant access to the Internet (279 students (93.9%)); however, it is surprising that as many as 6.1% of respondents do not have constant internet access, which, perhaps, the faculty could provide. When asked which of the following devices they own or have easy access to, 90.9% of students said they own a smartphone, 74.1% of students said they have a laptop, 27.9% of students said they have a desktop computer, while only 9.8% of students stated that they own a tablet.

The data collection was conducted using a survey questionnaire. The focus content areas for the questionnaire were identified with a search on the Web of Science site. Guidelines for improving the quality of on-line surveys and empirical research methods were considered, and the preliminary questionnaire was sent to an independent researcher for peer review control and to selected students for validation of the questions. Their suggestions were integrated into the final version of the questionnaire, which was prepared in the local language (Serbian) and made in an on-line version (Google Forms). The questionnaire (a modified Survey of Social Media and e-Learning in Sport Science and Sport Medicine, created by Rigamonti et al. (2020)) was designed to collect the data (49 items) that to test proposed hypotheses and identify attitudes and preferences of students in sports science concerning the use of e-learning (with a special focus on the professional development of staff in the technology-enhanced learning) and social media at the University of Novi Sad (with a focus on different genres, especially focusing on social media writing). The questionnaire contained three separate parts: (1) general information (8 items); (2) use of different genres of social media in teaching (28 items); and (3) e-learning in the field of sports studies (13 items). The second part of the questionnaire contained five different sections: (1) social networking sites; (2) image sharing & messaging sites; (3) video sharing sites; (4) social blogging; and (5) social community and discussion sites, while the third part of the questionnaire has contained two sections: one that investigates the general issues and one that investigated the issues caused by the coronavirus pandemic and professional development of staff in technology-enhanced learning. The questionnaire was distributed to students at all levels of study (bachelor, master and doctoral).

Descriptive statistics (frequencies) were used to describe the basic features of the data, providing simple summaries about the measures to identify the attitudes and preferences of students in sports science concerning the use of e-learning and social media at the University of Novi Sad.

Results and discussion

In the first place, empirical research was conducted to identify students' attitudes and preferences in sports science concerning social media use at the University of Novi Sad, focusing on different genres, especially focusing on social media writing. The second part of this section presented the results

related to identifying students' attitudes and preferences in sports science concerning the use of e-learning with a special focus on the professional development of staff in technology-enhanced learning.

With regards to the use of different genres of social media, it is worth noting that the research study identified the attitudes and preferences of students of five different genres, namely: (1) social networking sites; (2) image sharing and messaging sites; (3) video sharing sites; (4) social blogging; and (5) social community and discussion sites (Barnhart, 2017).

Regarding social networking sites, students answered the question of whether they use Facebook, LinkedIn, Twitter, Viber, WhatsApp and Skype in the curriculum of their study programme, including any information, data or acquisition of knowledge, which is not organizational only (Table 1); as well as what type of messages they most often share via each aforementioned social networking sites (Table 2). It is interesting that students from the Faculty of Sport and Physical Education at the University of Novi Sad mostly use Facebook (44.4% of students), Viber (66%) and WhatsApp (56.6%) to contact peer students for study-related learning purposes, much more than they use other media, such as LinkedIn (1.3%), Twitter (0.3%), and Skype (4%), which is in line with previous studies (cited in Rigamonti et al., 2020). However, the students do not use most social networking sites to contact teachers for study-related learning purposes; just 9.4% of students use

Viber and all other media significantly less.

In contrast, the students use Viber and WhatsApp more than other social networking sites to post knowledge contents (e.g., statements, links, materials) (12.1% - Viber; 13.1% - WhatsApp) and to discuss study-related knowledge contents (actively) (19.9% - Viber; 18.9% - WhatsApp), while the usage of Facebook is connected to Viber and WhatsApp and much higher in comparison to other social networking sites when the students receive knowledge contents (e.g., expert information, links, materials) (21.9% - Facebook; 12.1% - Viber; 15.8% - WhatsApp) and when following discussions about knowledge contents (passively) (12.8% - Facebook; 13.8% - Viber; 11.1% - WhatsApp). It is surprising that not more than 10% of the students pointed out that they would appreciate if their teachers used social networking sites as teaching aid or tool (where appropriate), while a huge percentage of the students do not use social networking sites at all (or at least not at all for learning purposes): Facebook (45.5% of students do not use it), LinkedIn (97%), Twitter (99%), Viber (29%), WhatsApp (38.7%) and Skype (94.6%).

Therefore, the obtained results in this paper are in line with those of Henderson (2015) and revealed that students' use of digital technologies is conventional. This way of using technologies supports the everyday routine academic activities in student life, such as time-saving, sharing the information among groups of students, remote access to the course and library, and similar.

Table 1. Attitudes and preferences of students concerning the use of social media with a focus on different genres

	Facebook	LinkedIn	Twitter	Viber	WhatsApp	Skype
	(in %)					
I use this social networking site to contact peer students for study-related learning purposes	44.4	1.3	0.3	66.0	56.6	4.0
I use this social networking site to contact teachers for study-related learning purposes	6.1	0.7	0.3	9.4	5.4	2.4
I use this social networking site to post knowledge contents (e.g., statements, links, materials)	4.0	1.0	0.0	12.1	13.1	1.3
I use this social networking site to receive knowledge contents (e.g., expert information, links, materials)	21.9	0.7	0.3	12.1	15.8	1.3
I use this social networking site to discuss study related knowledge contents (actively)	5.4	0.3	0.0	19.9	18.9	2.0
I use this social networking site to follow discussions about knowledge contents (passively)	12.8	0.7	0.7	13.8	11.1	1.7
I would appreciate it if my teachers used this social networking site as a teaching aid or tool (where appropriate)	4.0	0.7	0.3	8.4	6.1	2.0
I do not use this social networking site (or at least not at all for learning purposes)	45.4	97.0	99.0	29.0	38.7	94.6

Regarding the type of messages the students share via social networking sites, it is important to highlight that social media writing within student populations is the most connected to Viber and WhatsApp. The students mostly share their messages via Viber and WhatsApp in the form of various questions (67% via Viber; 62.6% via WhatsApp), video messages (20.5%; 25.3%), screenshots (21.2%; 27.6%), various links (23.2%; 25.3%), comments on a current topic (22.2%; 22.2%), while Facebook is close to the two aforementioned social networking sites in the form of various questions (30%)

and various links (12.5%); all other questions regarding this issue, including slide shows, visual quotes, and polls, did not reach more than 10% of the student responses. It is also interesting to mention that a huge percentage of students said he/she does not share messages at all via (Facebook: 57% of the students; LinkedIn: 94.6%; Twitter: 94.6%; Viber: 27.6%; WhatsApp: 35%; Skype: 93.3%). WhatsApp's primacy as the most commonly used application for academic purposes was confirmed by Ashour (2019) in an exploratory study of using digital technologies of students in the United Arab Emirates.

Table 2. Attitudes and preferences of students concerning the use of social media with a focus on social media writing

	Facebook	LinkedIn	Twitter	Viber	WhatsApp	Skype
	(in %)					
Various questions	30.0	1.7	0.7	67.0	62.6	3.7
Visual quotes	3.4	0.7	0.0	7.7	7.7	0.3
Video messages	8.4	0.3	0.3	20.5	25.3	2.0
Screenshots of your screen	9.4	0.3	0.0	21.2	27.6	0.3
Slide shows	1.7	0.3	0.0	9.4	8.8	0.7
Polls	4.0	1.0	0.3	6.1	5.7	0.3
Various links	12.5	1.7	0.3	23.2	25.3	2.0
Comments on a current topic	8.4	0.3	1.7	22.2	22.2	1.0
I don't share messages at all	57.2	94.6	94.9	27.6	35.0	93.3

The results of the present study and Ashour (2020) also overlapping the results about Facebook as the least used social media platform for academic purposes.

Regarding image-sharing and messaging sites (Instagram and Snapchat), students answered the same questions and showed us they use Instagram much more than Snapchat that 91.6% of students do not use at all (or at least not at all for learning purposes). Although 48.2% of student do not use Instagram, it is interesting to highlight that the students use it mostly to contact peer students for study-related learning purposes (46.5%), while social media writing within student populations is the most connected to the various questions (50.2%), as well as video messages (26.3%) and screenshots of their screen (27.3%).

Regarding video-sharing sites (YouTube and Vimeo), students answered the same questions and revealed that while they use YouTube much more than Vimeo, 97.3% of students do not use these sites at all (or at least not at all for learning purposes). Although 53.2% of student do not use YouTube, it is interesting to highlight that the students use it mostly (32%) to receive knowledge contents (e.g., expert information, links, materials), while 82.2% said they do not share messages via this network. This is not in line with the facts determined by other studies that highlighted the students' preferences for videos as learning tools (Hampton, Pearce, & Moser, 2017), especially in sport sciences, due to the necessity of better visualization of motions sequences or tactical aspects of performance.

Regarding social blogging (Medium and Tumblr), students answered the same questions and let us know that they seldom use Medium and Tumblr, which is also the case with social community and discussion sites (Reddit and Quora).

Regarding the use of e-learning, it is worth noting that the present study investigates the issues caused by the coronavirus pandemic and the professional development of staff in technology-enhanced learning. It is important to highlight that 96% of students confirmed they use e-learning contents (i.e., any kind of on-line learning/teaching/knowledge materials) for their studies (39.7% more than once a week; 32.3% at least once a week; 15.5% less than once a week but not less once a month; 8.4% less than once a month); however, it is interesting that more than half of students (54.5%) did not know which learning management system (LMS) their institution uses. On contrast, they knew which modules available on their LMS platform that they mostly use in the teaching process (e-literature; multimedia content, video conferencing et cetera), as well as which on-line sources they mostly use to

acquire knowledge or scientific information for their studies (Wikipedia, YouTube, etc.). Furthermore, it is interesting to examine the issue that referred to the question of whether their institution offered free access to all e-learning materials that are necessary for their study: 63% of students confirmed this fact, while 23.9% of students use some additional materials that are available somewhere else for free and 4% has to pay. The rest, 13.8% of the students, do not use e-learning; 22.2% of students would appreciate it if their institution offered more e-learning materials for their studies.

Lastly, it is important to conclude this manuscript with some very important facts. It is an alarming fact that 81.5% of students think that the pandemic caused by the SARS-CoV-2 virus has set back the teaching process in a general sense, but 51.2% of student shared the opinion that the pandemic has had a positive impact on the improvement of e-learning in the field of sports studies and professional development of staff in technology-enhanced learning. A total of 61.2% of students believe that their institution has adequately responded to the challenges posed by the pandemic. With regards to the question of whether the students think that virtual teaching is as effective as traditional teaching and that it can replace it adequately in the future, 85.2% disagreed, while 41.8% agreed on the condition that traditional and virtual teaching methods combined in the future, but the rest of the students also disagreed with this idea. This research is in line with the findings of Ashour (2019) that traditional teaching methods are still preferred by students more than virtual teaching methods in the academic education process.

Conclusions

In conclusion, it is worth noting that the results of this research showed the diverse use of social media and not very significant e-learning tools by students in sports sciences to improve and support their studies, and it can have extremely significant theoretical and practical applications. Namely, students' attitudes and preferences in sports science concerning the use of e-learning and social media at the University of Novi Sad were identified, and the teaching activities can be precisely guided in the right direction. The students prefer using some e-learning, and social media also express their potential in situations in which teachers consider such a thing to be possibly useful. Noteworthy and meaningful results have been achieved, and a cross-section has been made that will be a springboard for further practical activities and scientific research in this area.

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Conflict of Interest

The authors declare that there are no conflicts of interest.

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