Mobile Devices and Social Networks Within Pre-service Teacher Preparation

Jana Burgerová, Martina Adamkovičová
Department of Natural Sciences and Technological Disciplines, Faculty of Education, University of Presov in Presov, Slovak Republic
{martina.adamkovicova; jana.burgerova}@unipo.sk

Abstract

The article provides results of monitoring the ownership and exploitation of mobile devices and social networks within the pre-service teacher preparation at the Faculty of Education, University of Presov in Presov, Slovak Republic. The research sample consisted of 473 respondents by the method of questionnaire. The tool was available online and included 12 items requiring both open and multiple choice answers of one, four or more choices. The data were processed by the IBM SPSS statistics software. The results are displayed in the form of figures and described. They proved students were equipped with various types of both the latest and other devices. They exploit them to access to study materials, information reflecting their personal and professional interests. Within the research the use of social networks was also under the focus. The results showed three types of social networks (Facebook, LinkedIn and Google+) are the most frequently accessed, both for university and further education.

Keywords

mobile device, mobile learning, mobile-assisted learning, m-learning, social network, higher education.

Introduction

The 21st century, also called the Information Age, has been the era of fast development of digital technologies. Currently, the generation of digital natives (i.e. those born 1980-2000) has enrolled at universities. They are strongly influenced by these technologies, growing up in the networked world, sharing global culture, and having computer skills and knowledge (Palfrey a Gasser, 2008, Morgan and Bullen, 2011).

Despite the term of digital natives was rather frequently exploited, currently this one has been replaced by the expression digital learners, as it reflects the 21st century student´s vision to a wider extent. The definition of a digital native differs from the view of the whole society, region, country, time period etc. At the same time, other criteria should be considered so as the core of the digital technology use by students could be clearly understood (Gallardo-Echenique, 2015).

The criteria, among others, also include the ownership and exploitation of mobile devices, particularly smartphones and tablets, which might prepare conditions for mobile-assisted learning. Advanced mobile devices such as "smart" cellular telephones are very popular

primarily because they are wireless and portable. These functionalities enable users to communicate while on the move (Hussejn and Cronje, 2010). In spite of the fact, the current generation shows more willingness and ability to exploit technologies for educational purposes, the analyses in publications deadling with this topic are not in accord with the reality, Bennett, Maton and Kervin state (2008).

Reflecting the above mentioned, the main objective of this article is to find out how the pre-service teachers from the Faculty of Education, University of Presov in Presov, Slovak Republic, are equipped with mobile and other devices, so as the process of mobile-assisted learning could be started.

Theoretical background

Mobile learning (m-learning) and its exploitation in education has become an area of interest of numerous authors. Most of them observe mobile learning as a naturally evolved form of e-learning. However, this opinion has some deficiencies. E-learning occurred as a new form within the distance learning and its terminology is close to those applied in traditional learning. Although the applications of mobile learning are seen as an evolution of e-learning, m-learning is a characterized as technology and has its own terminology (Korucu and Alkan, 2011).

Keegan (2002) defines mobile learning as running of education through PDAs, pocket PCs and mobile phones. However, he recognized that mobile learning should focus on the actual mobility of the device. Mobile learning should be "restricted to learning on devices which a lady can carry in her handbag or a gentleman can carry in his pocket" (Keegan, 2005, p. 33).

Hussejn and Cronje (2010) state, mobile learning as an educational activity makes sense only if the technology in use is fully mobile and if the users of the technology are also mobile while they learn. These observations emphasise the mobility of learning and the significance of the term "mobile learning". Traxler (2007) and other supporters of mobile learning define mobile it as public, used by a learner as he or she participates in higher education. Others define and conceptualise mobile learning by placing a strong emphasis on the mobility of learners, the mobility of learning, and the experience of learners as they learn by means of mobile devices. Two terms should be explained in detail, when mpbile learning is under the focus: the mobility and the learning. On the one hand the "mobility" refers to the capabilities of the technology within the physical contexts and activities of the students as they participate in higher learning institutions. On the other hand, it refers to activities of the learning process, the behaviour of the learners as they use the technology to learn. It also refers to the attitudes of students who are themselves highly mobile as they use mobile technology for learning purposes. Traxler (2007) notes that there are some definitions and understandings of mobile education, which focus only on the technologies and hardware, whether it is a handheld and mobile device such as personal digital assistants (PDAs), smartphones or other wireless devices. These definitions undermine a proper understanding of the uses of mobile technology in learning by confining their explanations and descriptions to the actual physical way in which the technology operates. Other definitions place more emphasis on what learners experience is, when they use mobile technologies in education, while others inquire how mobile learning can be used to make a unique contribution to the advancement of education and other forms of e-learning. In the context of higher education Hussein a Cronje (2010) emphasize that using the mobile device as a signifier, the concepts of mobility can be divided into three significant areas: *mobility of technology, mobility of learner and mobility of learning.*

Results of the researches conducted at three American universities applying focus groups of students resulted in the fact that mobile learning offers much more educational potential than

simply accessing resources. (Grant and Gikas, 2013). It is important to note that even though mobile learning may look like web-based learning in that mobile computing devices connect different technologies to exchange information, the mobile device is "a contemporary paradigm for connecting, communicating and getting things done on mass-customized and yet personal relationship level that extends to the devices themselves" (Kainz 2011, p. 12).

In the Czech and Slovak Republics partial researches have been conducted in the field of the exploitation of mobile devices within education, e.g. Šponiar and Brestenská, 2014; Kajanová and Šedivá, 2012; Šimonová and Poulová, 2015; Maněnová, 2013), which support the hardware readiness for the mobile learning implementation into education.

Participation the Faculty of Education, Presov University, in the exploitation of mobile devices within primary education

Since 2013 the exploitation of tablets for educational purposes has been closely connected to the Slovak project School on the Touch. Primarily it focused on providing 400 tablets Samsung Galaxy Note 10.1. to 15 selected Slovak schools. The touch screen could be accessed through the tablets via Samsung School application. Instead of other activities, the equipment enabled to start the project My First School. The Faculty of Education, University of Presov, was one of the project supporters – the only one dealing with pre-service teacher preparation in the Slovak Republic on the pre-primary and primary level and supported them in preparing activities and materials towards implementation of digital technologies on this level of education. The Faculty of Education, University of Presov, participated in the learning content preparation and reviewer of digital education methodologies.

Reflecting this state, students of study programmes Pre-primary and Primary Education at the Faculty of Education, University of Presov, can acquire the newly created field didactics, as well as with the use of tablets and other mobile devices. Therefore, were conducted the below described research, particularly focusing on students´hardware equipment and the exploitation for educational purposess.

Methodology of Research

The research was structured into … phases: (1) research sample was defined, (2) the research tool was created and piloted, (3) the collected data were processed by statistics software, displayed in the form of figures and described.

Research sample

Totally, 473 respondents were included in the research sample having following characteristics:

- 460 female and 13 male respondents;
- 376 of them between 20-24 years old, 65 below 20, 14 between 25-29 years, 6 belonged to 30-34 year group, ř between 35-39 years and 7 respondents were 40+ years old;
- 448 of them were enrolled in the full-time form of study programmes, 25 respondents attended part-time forms;
- on the bachelor (410), master (62) or doctoral (1) levels;
- 454 of them studying any of teaching study programmes – for the pre-primary and primary level (192), for handicapped learners (78).

Research tool

The method of questionnaire was applied in the research. The questionnaire included 12 items (questions), eight dealing with mobile devices and their exploitation (group 1), four focused on preferred social networks (group 2):

- Mobile devices exploited for communication with family, friends (four choices)
- Mobile devices exploited for communication at school, at work (four choices)
- Mobile devices exploited for entertainment (all choices)
- Mobile devices as sources of information for university study (all choices)
- Mobile devices exploited for university study (all choices)
- Mobile devices as sources of information for further education – interests, profession (all choices)
- Mobile devices exploited for further education – interests, profession (all choices)
- Mobile devices owned by respondents
- Preferred social network: Facebook
- Preferred social network: LinkedIn
- Preferred social network: Google+

Respondents provided answers in the open format or multiple choice format of one or more choices. The link to the questionnaire was available to the students above listed study programmes. The return rate 86 per cent.

Research results

The collected data were processed by the IBM SPSS statistics software, displayed in the form of 12 figures and described.

When comparing figures 1 and 2 where mobile devices exploited for communication with family and friends (figure 1), and at school and work (figure 2) are displayed, it can be stated the results are rather similar. The most surprising finding is that even living in the times of e-society, the personal contact is still the most frequent way of communication, both in the private and professional field. Then, the use of notebooks and mobile phones follows, however, been more frequent for communication in the private sector, which is surprising. The use of other devices is nearly identical in both areas.
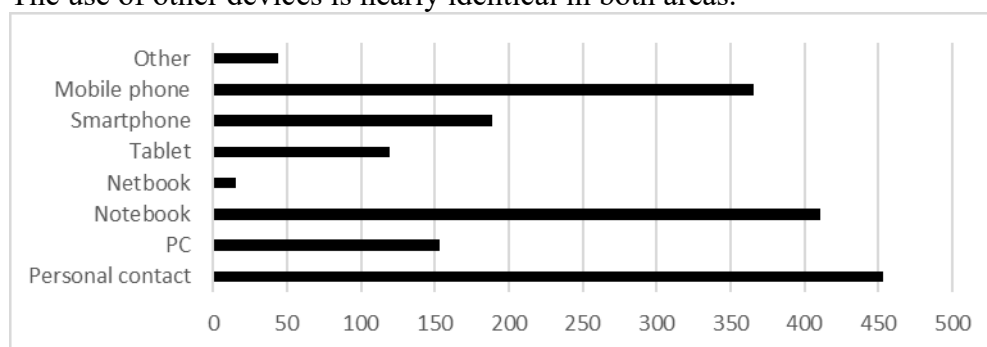

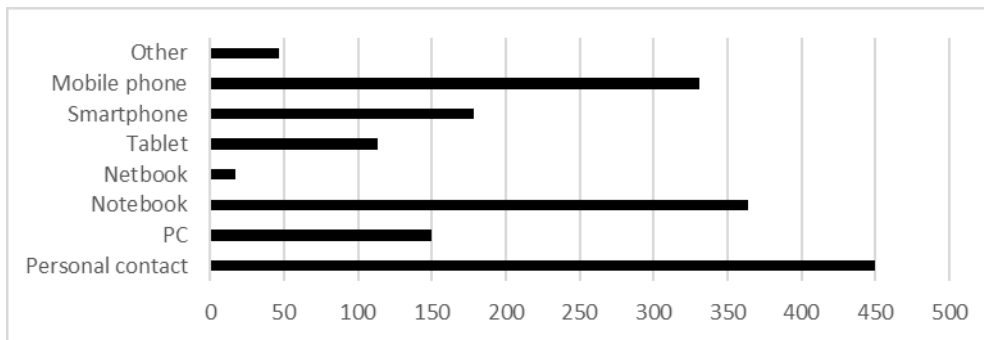**Fig. 1:** Mobile devices exploited for communication with family, friends

Fig. 2: Mobile devices exploited for communication at school, at work

Different state was discovered in the field of entertainment. Notebooks were "the winner" in this field, closely followed by TV. The TV is definitely not a mobile device according to the latest definitions; however, it was included from the reason young people often proclaim they do not watch TV because of the low quality programme from their point of view. These data prove it is not fully true (figure 3).
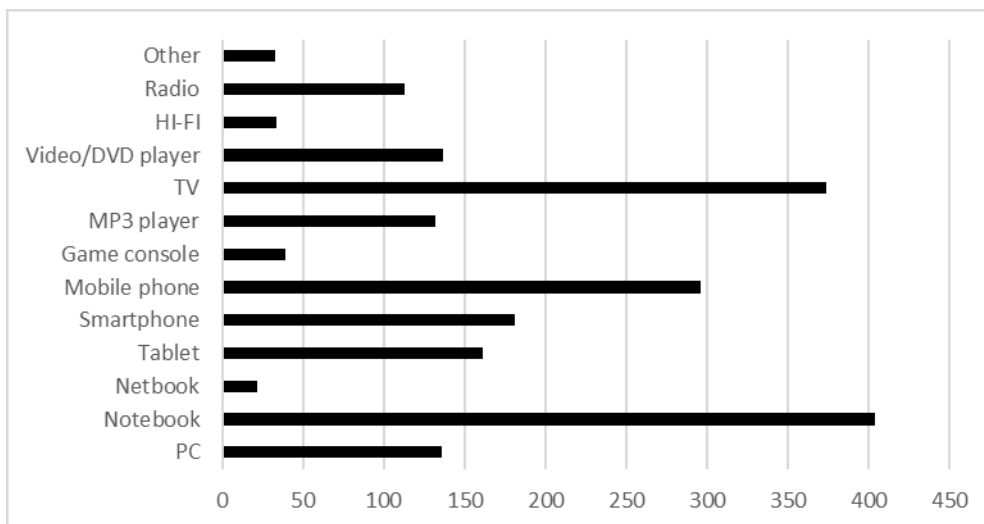

Fig. 3: Mobile devices exploited for entertainment

Following two figures deal with university study: mobile devices exploited as sources through which students have the information and study materials available are displayed in figure 4, whereas those used directly for the process of learning are in figure 5. The data show that among sources of information for univeristy study students strongly prefer personal attendance of lectures. This approach is supported by online subjects in the form of courses in the LMS Moodle and other materials which are available from the Internet free of charge. For the university study, i.e. for the learning process, student mostly exploit notebooks and mobile phones.
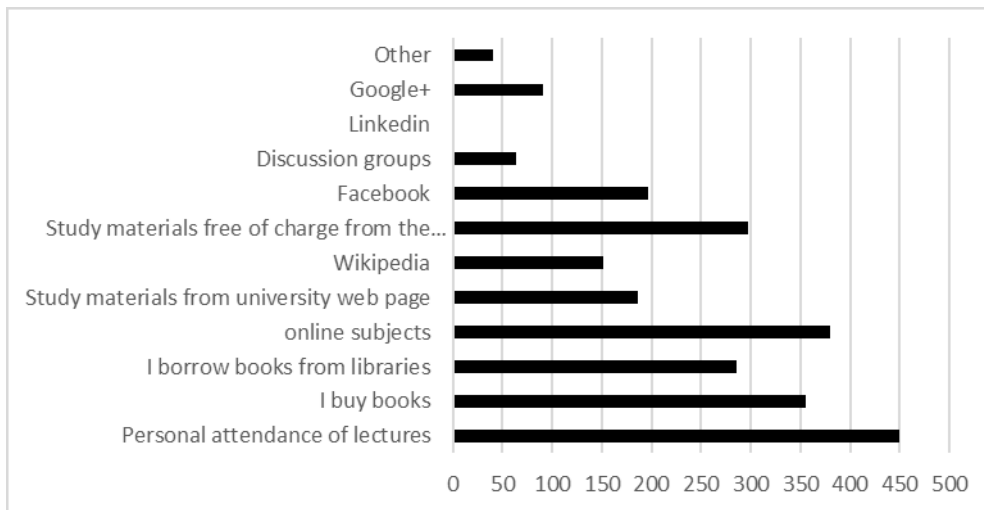
Fig. 4: Mobile devices exploited as sources of information for university study
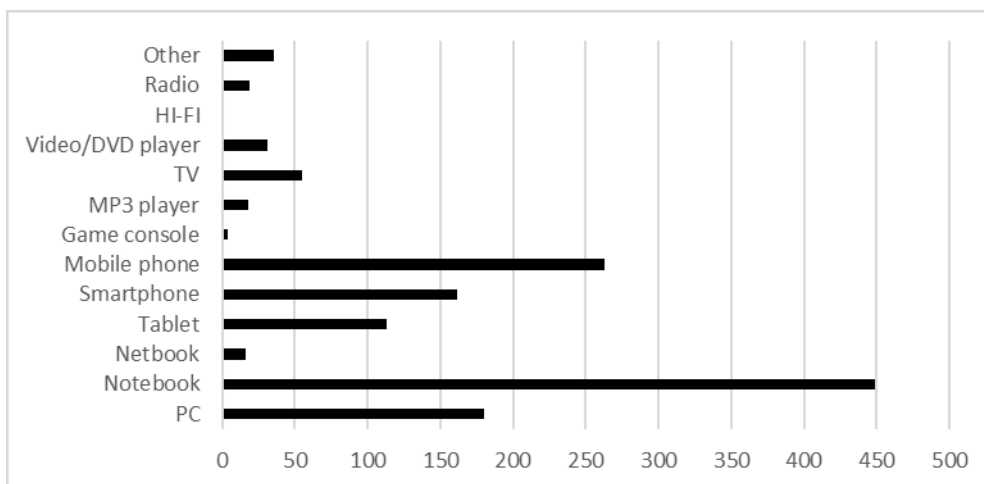

Fig. 5: Mobile devices exploited for university study

The results are nearly identical in the field of further education. Within this area, respondents interest- and profession-related exploitation of mobile devices were monitored. As displayed in figure 6, study materials available free of charge from the Internet are most frequently exploited. However, personal attendance of lectures reflecting respondents´ interests and/or professions are also frequently used, as well as books from libraries, buying new books, or downloading materials and discussions from Facebook. Most frequently used mobile devices for this purpose are notebooks, mobile phones, computers and smartphones, and TV was also often mentioned (figure 7).
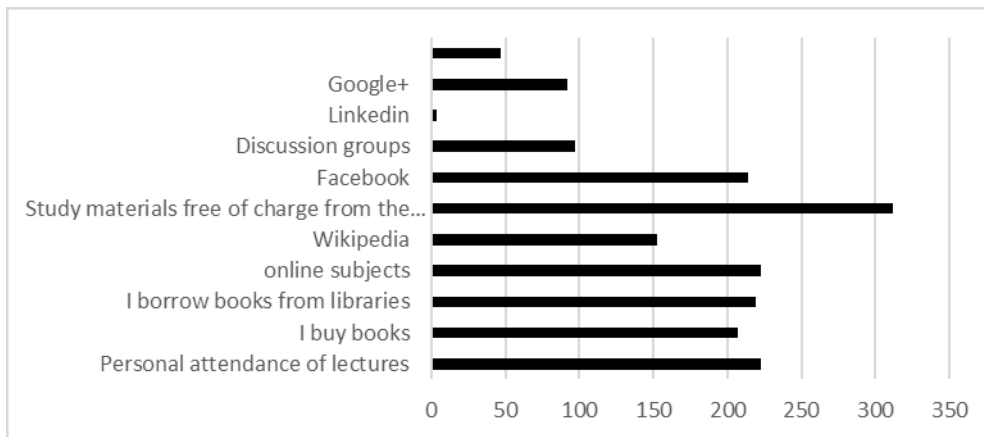
Fig. 6: Mobile devices as sources of information for further education – interests, profession
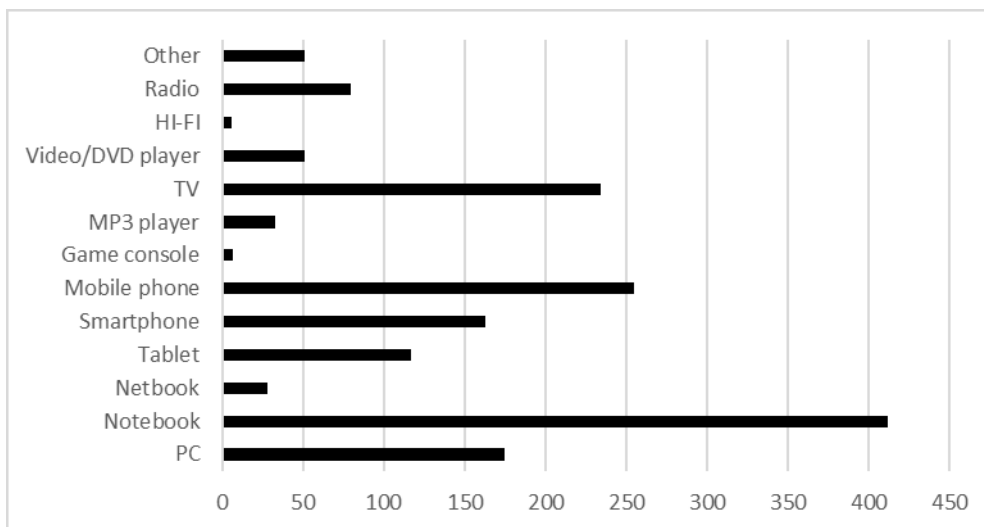

Fig. 7: Mobile devices exploited for further education – interests, profession

Within the final question of the group 1 dealt with the ownership of mobile devices. In other words, the question was, what mobile device/s respondents possess so as they can use them for both the private and professional/educational purposes. Figure 8 displays that notebooks were possessed by most repondents, followed by mobile phones, computers, tablets and smartphones. Reflecting the total amount of devices, this result shows there is high probability each respondent owns at least one type of device. This result means, the implementation of mobile devices into education at the Faculty of Education, University of Presov, can be started/run.
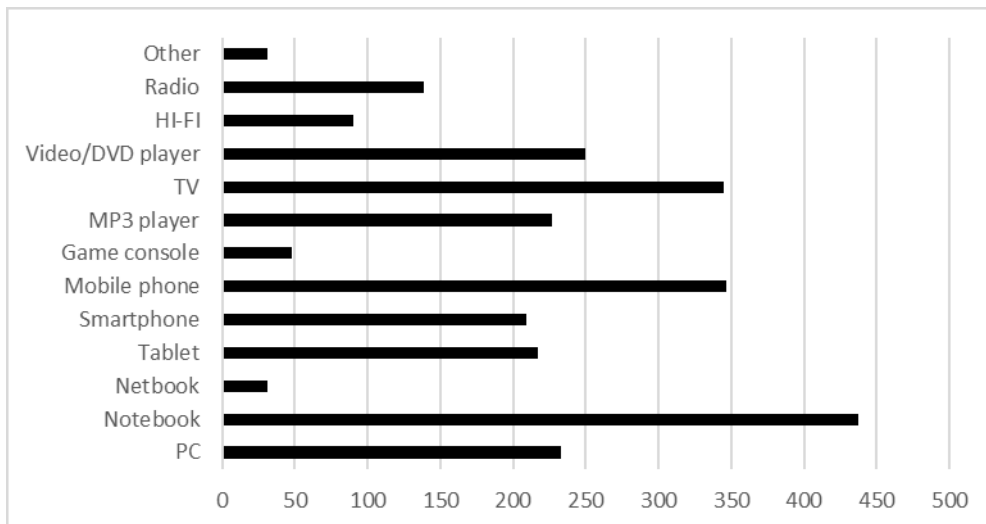
Fig. 8: Mobile devices students own

Following four questions dealt with social networks. Three of them were strongly preferred: Facebook (figure 9), LinkedIn (figure 10) and Google+ (figure 11). Figure 12 focuses on the use of other networks – among them, not a single one was listed as more than exceptionally used. As expected, Facebook was the most frequently used social network by nearly 90 % of users. No, or only exceptional use was detected with LinkedIn, and Google+ showed a partial exploitation, with only 3 % of those who use it several times per day.
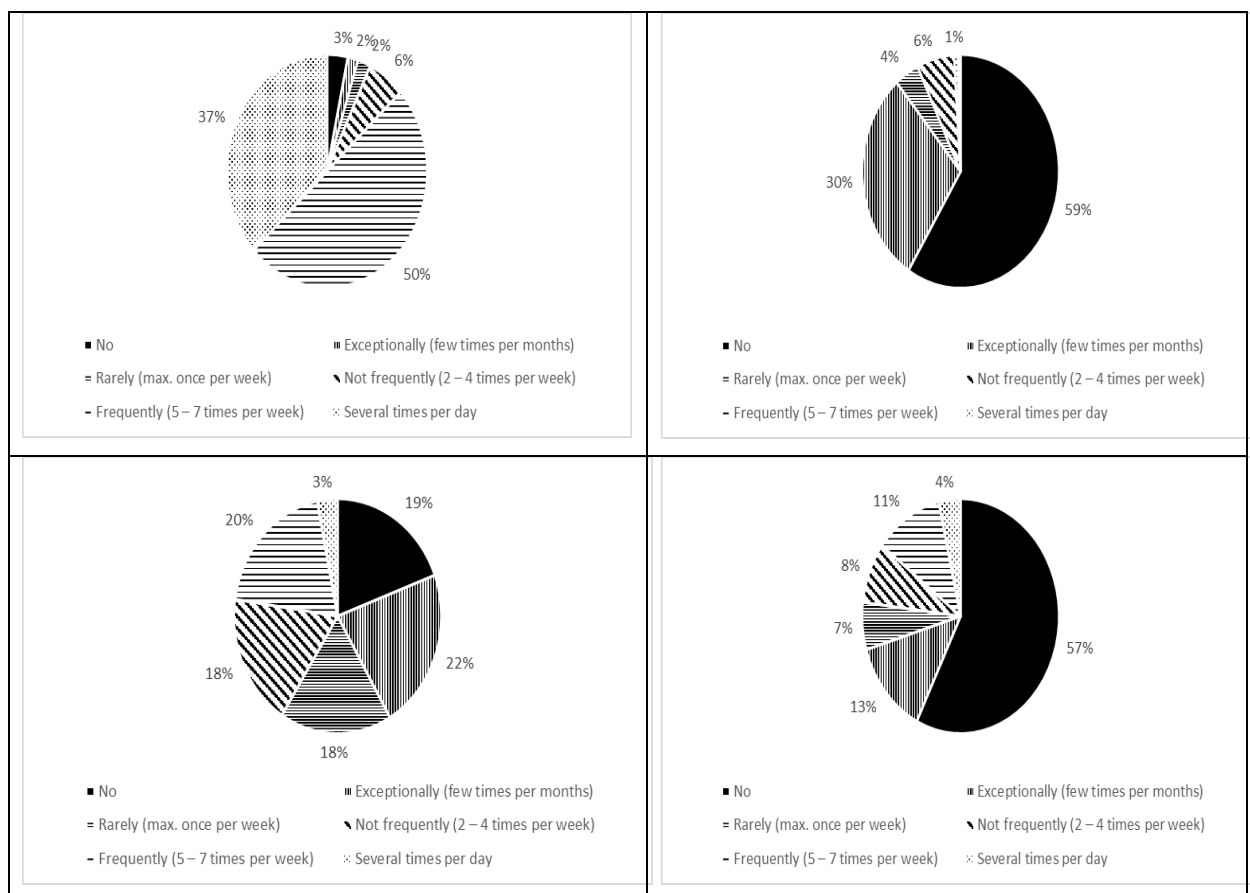

Fig. 9 Preferred social network: Facebook (top left)
Fig. 10: Preferred social network: LinkedIn (top right)
Fig. 11: Preferred social network: Google+ (bottom left)
Fig. 12: Other social networks exploited by respondents (bottom right)

Conclusion

Faculty of Education, University of Presov, Slovak Republic, has an ambition to stay a leader in pre-service teacher preparation on the pre-primary, primary level and pedagogy of learners handicapped in various fields of education. This task is closely related to reflecting latest trends into this process – and mobile devices and technologies belong to them without any hesitation. In correlation to the above presented results, the future attention should be paid mainly to:

  ✓ providing efforts to the infrastructure management and administration of mobile devices in classrooms and laboratories of the Faculty of Education,

  ✓ providing sufficient equipment (both hardware and software) to the pre-service teachers.

Reflecting the results of research on the exploitation of the Learning Management System Moodle and its tools conducted several years ago, students expected academic staff would be initiative, active and professional even in the field of mobile devices implementation into education (Adamkovičová a Burgerová, 2014). It means:

  ✓ the professional training of teachers of general and subject didactics will be requiredin the field of mobile devices implementation,

  ✓ tools (economic, motivation) to support teachers exploiting the mobile devices and technologies will help the process.

Last but not least, the learning contents of the above mentioned subjects, particularly ICT Didactics for primary level teachers, will have to be adjusted to the new requirements on graduates, including cloud platforms, applications and social networks in education, and the legal protection of the learning contents in mobile learning.

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