

# The use of Social Networks for Educational Purposes - Case Study: Polytechnic Nikola Tesla in Gospić

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**Abstract** - Social networks are a way of mass communication between users, but they are also applied for educational purposes. The aim of this paper is to analyze the way that students use social networks for educational purposes, to find out how students come to information, do they use social networks for access to information related to teaching and exams, and what they think about the quality of information obtained from social networks. The relationship between the use of social networks for educational purposes and demographic indicators is examined.  $\chi^2$  test for testing independence of the two characteristics was conducted.

**Keywords:** social networks, educational purposes, statistical analysis, Polytechnic, Facebook.

## 1. Introduction

Popularity and growth of online social networks has created a new way of collaboration and communication [1]. Social networks are a way of mass communication between users, but they have an educational use also. Communication has existed since the beginning of human beings and its main goal is to maintain and expand the existing circle of friends. When people communicate using social networks, it leads to a potential spreading of friendship circle and indirectly spreads number of

social networks users. Social networks research is conducted with sociometry. The method of sociometric research is based on discovering structure of relationships within particular social group (groups, classes, departments, etc.). The results of sociometric research are presented by sociograms. Today's social networks transfer concepts and ideas on widespread network – the Internet. The Internet became an „ideal“ platform for creating social networks which are not limited by geographic area. The creation of social networks on Internet has been enabled by advanced services like Facebook, YouTube, Instagram, Twitter and others. In this paper, the first chapter gives us an introduction into social network issues in the society, in the second chapter, social networks and education are described, in the third chapter, the research instrument, the sample and methodology are described. The fourth chapter presents the results of the research. The fifth chapter gives the concluding considerations.

## 2. Social networks and education

Social networks in the context of education are a tool that can be used for quickly finding the solution to a particular problem. By using social networks, groups of related persons can be created to exchange knowledge and information. Students have recognized the potential of Internet based communication technologies such as social networks, for improving potential network research [2]. Students are communicating on social networks (Facebook for example) using a style one-to-many in which they are the creators disseminating content to their friends. Also, they spent more time observing content on Facebook than posting content [3]. Knowledge and information exchange is happening almost instantaneous and so the group of users becomes „informed“. Consequently, teachers often create groups on social networks followed by their students. Students receive information (such as exam results, on-line questionnaires and statistics, content of collegiums, etc.) which they use in educational process, all for the purpose of following

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educational teaching content. Social networks are also a platform for multimedial content exchange within educational process. An additional possibility is „live“ teaching by live streaming service which can improve the educational process. Popularization of social networks reached its peak by using the Internet on the move. Mobile phones and tablets are platforms on which social networks can be used on the move. Information are distributed currently and individuals or groups get them on time. Additional possibility like chat services enable information and knowledge exchange through real time conversation. There are many educational materials (teaching materials) specially prepared for teaching using social networks. In the content editing on social networks, children's parents, students' parents and others can be included. The aim of these connections is creating virtual communities and one of examples of good practice is social network Edmodo. Edmodo is a social network that can be used for linking and collaboration between students and teachers and their parents also. Social network Edmodo helps in resolving communication and collaboration problems. Time spent in classroom does not have to be limited to 45 minutes. It lasts as much there is interest in a subject [4]. Social networks bring the contest closer to students. Through idea of exchange and collaboration, social networks can encourage students to engage in discussion, but also to accept each others. The recognition of educational potential of social networks in Croatia is presented in research Matešić, Vučković, Dovedan, (2009.) *Social software: teaching tool or not?* (Table 1.).

Table 1. Social networks use explained on a sample of 268 students and 100 teachers. [5]

Reason for using social software	Teachers	Students
Data retrieval and information extraction	52%	70.15%
Education	36%	50.37%
Selfpromotion	4%	19.40%
Reconnecting with old contacts	20%	49.25%
Maintaining contacts	30%	61.57%
Connecting with new contacts	12%	33.21%
Organization and planing of new events	12%	34.33%
Other	4%	5.22%

As we can see from table 1. and from the mentioned research conducted in 2009, 50.37 % of students use social networks for educational purposes, while 36% of teachers think the same. Even 79.15% of students use social networks for distribution of information and gathering data. Teachers think the same, even 52% of them. According to the same research from 2009, teachers highlighted the main advantages and disadvantages of the educational process using social networks. Advantages include quality of teaching process

supported by technology development, simplified process of getting and sharing information and discussion. The main disadvantages include content security, authorship of materials, lack of knowledge about creation of digital educational content, existence of e-learning system. Social networks also have the property of being “searchable” as mentioned in the paper work Watts, Dodds, Newman; Identity and search in social networks (2008) [6].

In conclusion, social networks not have to be used in non-verbal communication necessarily. They are more like a tool with optional, everyday communication, but also can be used in educational purposes. In that case, it is necessary to take care about presentation and availability of educational content and the way of creating educational content. It is also necessary to have certain level of informatics as well as information literacy.

According to Boyd and Elison (2008) [7] online social networks can be defined as „web based service which allows individuals (1) to built public or half-public profile within their own system, (2) to articulate the list of other users with whom they share their connection and (3) to look and use their own list of connections and other lists within system.“

Social networks can be classified as Open Access mediums which do not subject to copyrights and other limits. In registration process, the user is informed about the terms of use and privacy of contents. Social interaction is the main characteristic of social networks fully independent of different social themes in community.

According to Wellman „the world is made of networks, not of groups of interest“ [8]. As quoted in Skendzic, Kovacic and Macinko (2012) the key term in the context of social networks is identity [9]. Identity is also a tool for recognizing each other in network community. User's identity contains personal data as well as different features (habits) which are changing over time.

Table 2. Five most popular social networks according to the numbers of visitors on February 2017.

Social network	Monthly Visitors
Facebook	1.860.000.000
Youtube	1.000.000.000
Instagram	600.000.000
Twitter	313.000.000
Reddit	234.000.000

Source: <https://www.dreamgrow.com/top-15-most-popular-social-networking-sites/> (April 19<sup>th</sup>, 2017) [10]

According to data shown in table 2., Facebook had the most significant attendance of 1.860.000 users. One step behind is YouTube service with monthly popularity of 1.000.000 users. The figures speak about Facebook popularity: more than 1.15

billion of active users monthly, 1.23 billion users logged in every day, 1.74 billion of active mobile users, every second five user profiles are created on Facebook, average user has 130 „friends“, users spend 20 minutes on average using Facebook [11] [12]. Statistical data for the Republic of Croatia in category „Education“ (Croatian Universities) are shown in Figure 1. According to Grenhow (2011) „social network sites, typically seen as a distraction, might be re-envisioned as supports for revised student learning outcomes“[13].

Rank	Page Name	Total Fans
1	DOBA Fakultet Hrvatska	19 675
2	Aspira	11 143
3	Sveučilište u Zagrebu	10 196
4	Sveučilište u Dubrovniku	8 430
5	Zagreb School of Economics and Management	5 574
6	Hrvatsko katoličko sveučilište (Universitas Studiorum Catholica Croati...)	3 331
7	Sveučilište u Splitu - University of Split	2 672
8	EFST Ekonomski fakultet - Sveučilište u Splitu	2 065
9	IMEF Split	788

Figure 1. Ranks and the number of Facebook web page fans in category „Education“ (Croatian Universities).

Source: <https://www.socialbakers.com/statistics/facebook/pages/total/croatia/society/education/university/> (April 19<sup>th</sup> 2017) [14]

### 3. Research instrument and a sample

#### 3.1. Research instrument

In this research the method of questionnaire was applied. The questionnaire consisted of six demographic questions (age, gender, year of study, student status, average success and enrolled study). The second part of the questionnaire consisted of eleven questions about the use of social networks. The questions were about the frequency of using social networks, time spent on social networks, the purpose of using social networks, the exchange of information through social networks, getting information through social networks, the validation of information obtained through social networks, the need of creation a Polytechnic profile on social networks.

#### 3.2. Sample

The research was conducted in March 2017. 83 students from the Polytechnic Nikola Tesla in Gospić participated in this research. Respondents were randomly selected based on the principle of a simple random sample. Out of the total number of completed questionnaires, 48.19% were students of Professional Study of Economics of Entrepreneurship, 51.81% were students of Professional Study of Road Traffic. Average age of respondents was 20.23 years. There were 52.11% male students and 47.89% female students. 47% were students of the first year studies, 15.66% were students of the second year studies and 37.34% were students of the third year studies.

Full-time students were mainly included in the survey: 90.36% were full-time and 9.64% of the students were part-time. 12.9% of the respondents had average success excellent-very good, 67.74% good-sufficient, while 19.36% did not pass any exam until the questionnaire was completed. 98.8% of the respondents had a profile on one of the social networks, while 1.2% had no profile. Most commonly used social network was Facebook (85.26% of the respondents), then Google+ (10.5% of the respondents), then Twitter (1% of the respondents), and others (3.16% of the respondents). Hence, we considered that the sample was representative.

### 4. Results of the study

According to the data obtained from the questionnaire, 15.66% of the students use social networks for up to 1 hour per day, 36.15% for 2 to 3 hours per day, and 48.19% for more than three hours per day. 86.75% of the students use social networks for getting information about teaching, while 13.25% do not use them. According to the answers of the respondents, students consider that the possibility of using social networks for educational purposes is very good (16.87%), good (42.17%), medium (34.94%), weak (4.82%) and very weak (1.2% ). These data are shown in Figure 2.

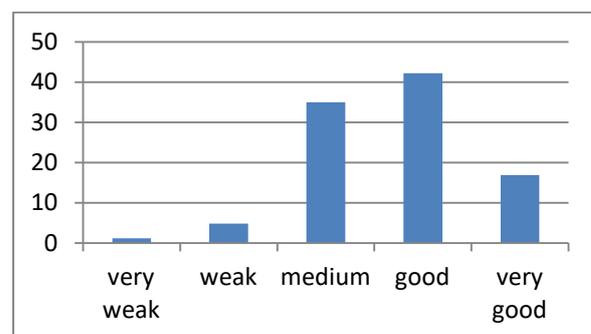


Figure 2. Use of social networks in educational purposes. Source: author's calculation.

Students use social networks for exchange of information with their colleagues (18.07%), then through groups created for this purpose (27.71%) and all of the above (54.22%). Students consider that social networks make it faster to access information related to teaching (61.45%), while 3.61% think that social networks don't make it faster to access to information related to teaching. 34.94% of the respondents are not sure. The data described above is shown in Figure 3.

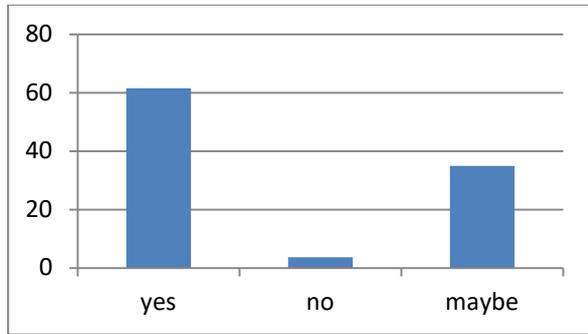


Figure 3. The social network provides faster access to information related to teaching.  
Source: author's calculation.

27.71% of the students use social networks for discussion about actualities at the Polytechnic, 31.33% do not use them, and 40.96% of students use them sometimes. The data described above is shown in Figure 4.

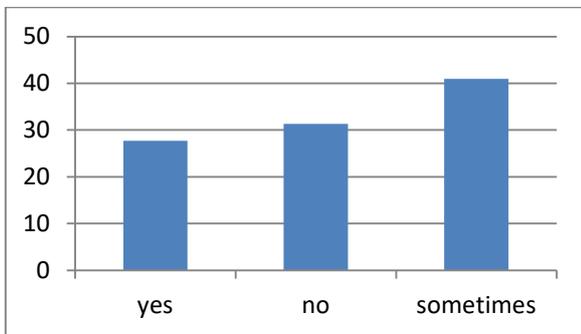


Figure 4. Use of social networks to discuss about actualities at the Polytechnic.  
Source: author's calculation.

39.76% of the students claim that social networks help them to get information about studies and exams, 9.64% claim that they don't help them, while 50.6% of them claim that social networks only help them sometimes. These data are shown in Figure 5.

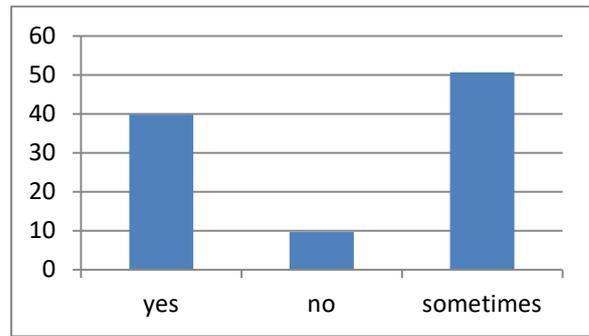


Figure 5. Social networks as a help in getting information about studies and exams.  
Source: author's calculation.

9.64% of the students claim that all information obtained through social networks are reliable, 33.74% of them claim the contrary, while 56.63% of the students always additionally check information obtained through social networks. These data are shown in Figure 6.

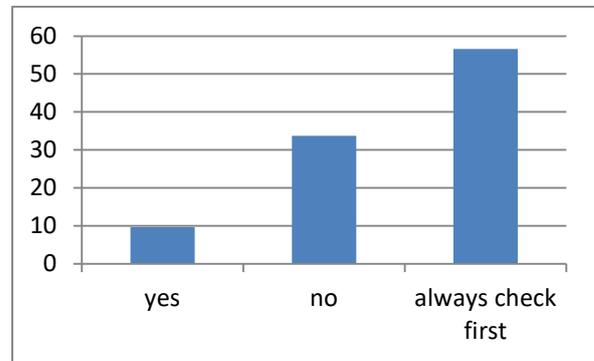


Figure 6. Information obtained through social networks are reliable.  
Source: author's calculation.

60.24% of the students consider social networks necessary for getting information related to teaching at the Polytechnic, while 39.76% of the students think the contrary. 69.88% of the students believe that the Polytechnic should create a profile on one of the popular social networks in order to improve the timeliness of informing students, while 30.12% of students think the contrary. The data described above are shown in Figure 7.

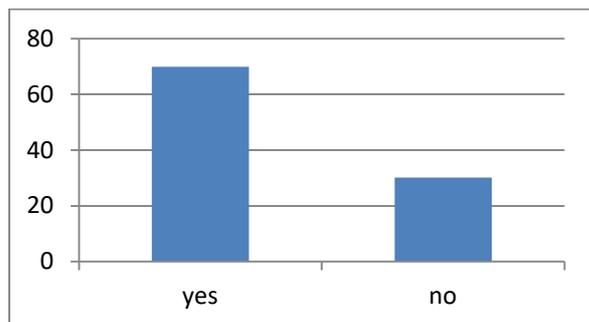


Figure 7. Social network profile of the Polytechnic.  
Source: author's calculation.

For the purpose of the research, the examination of the independence of two characteristics was carried out using  $\chi^2$  test.

The analysis showed that there is a significant relationship between the gender of the students and the speed of accessing the information related using social networks ( $\chi^2=7, p=0.03$ ). Thus, male students are more inclined to believe that social networks help them to access information related to teaching than the female students. The female students are more skeptical and are not sure about it. Furthermore, relationship between gender and the use of social networks to discuss the actualities at the Polytechnic was significant ( $\chi^2=12.91, p=0.002$ ). Male students use social networks to discuss the actualities at the Polytechnic, while female students do not use them, only occasionally.

The year of study as a demographic characteristic of the students is significantly related to the way that social networks are used for information exchange ( $\chi^2=15.73, p=0.003$ ), so students of the lower years use all the possibilities (through their colleagues and groups created for this purpose) while students of higher years exchange information exclusively through colleagues. There is a significant relationship between the years of study and the belief that social networks are found to be necessary in getting information related to teaching at the Polytechnic ( $\chi^2=6.41, p=0.04$ ). The students of the lower years of study consider social networks as necessary while the students of the higher years of study do not consider them as necessary. Finally, the year of study is also significantly related to the belief that the Polytechnic should create a profile on one of the popular social networks in order to improve the timeliness of informing students, so the students of the lower years of study believe that the Polytechnic should open the profile while to the students of the higher years of study it does not matter ( $\chi^2=6.08, p=0.05$ ).

There is a significant relationship between average success in studying and thinking about the possibilities of using social networks in educational purposes, the students with a lower average success (good-enough) consider this possibility as very good, while the students with better success (very good-excellent) consider the possibility of using social networks for educational purposes as weak or very weak ( $\chi^2=16.57, p=0.035$ ). The average success is related to the belief that the social networks provide faster access to the information related to the lessons. The students with better average success think that it does not allow them while the students with the lower average success think it allows them ( $\chi^2=17.85, p=0.001$ ). The average success in studying is also related to the opinion whether social networks are necessary in information related to teaching at the Polytechnic, in a way that students with lower

average success consider social networks necessary, while students with a better average success do not consider them necessary ( $\chi^2=11.53, p=0.003$ ). Finally, the average success of the study is also related to the opinion whether the Polytechnic should create a profile on one of the popular social networks in order to improve the timeliness of student information, and students who do not yet have a grade believe that a profile should be created while students with a better average success believe it is not necessary ( $\chi^2=6.84, p=0.033$ ).

The enrolled study is related to the use of social networks and for the purpose of getting information about teaching, so students of road traffic use social networks for the purpose of getting information about teaching more than economics entrepreneurship students ( $\chi^2=4.57, p=0.032$ ). Furthermore, the enrolled study is related to the way the students use social networks to exchange information so that road traffic students get more information from their colleagues than the economic entrepreneurs students, while economic entrepreneurs use groups created for this purpose ( $\chi^2=5.5, p=0.06$ ).

## 5. Conclusion

The aim of this paper was to analyze social networks with the special emphasis on their application and use for educational purposes. The survey was conducted using a survey questionnaire, and the sample was created from students of Polytechnic Nikola Tesla in Gospić. The analysis showed that students differ significantly in the use of social networks for educational purposes with regard to gender, year of study, average success of study and enrolled study. The male students consider that the social networks allow them faster access to information related to teaching and use social networks used to discuss the actualities at the Polytechnic while the female students do not consider that social networks provide them faster access to information related to teaching and use social networks to a lesser extent for discussion about actualities at the Polytechnic. Lower years of study students exchange information with colleagues and through groups created for this purpose, the social networks are considered necessary in getting information related to teaching and it is considered that the Polytechnic needs to have a profile on one of the popular social networks while students of higher years of study exchange information only through colleagues, consider that the social networks are not necessary in informing about teaching and consider that it is not necessary for Polytechnic to have a profile on one of the popular social networks. Students with a better average success believe that

the possibility of using social networks for educational purposes is weak and very weak, do not consider social networks necessary in informing about teaching and consider that for the Polytechnic, the profile on one of the popular social networks is unnecessary, whereas the students with lower average success consider that the possibility of using social networks for educational purposes is good and very good, consider social networks necessary in informing students related to teaching. Students who do not yet have a grade believe that the Polytechnic should open a profile on one of the popular social networks. Road traffic students exchange information only through colleagues and do not use social networks for getting information about studying and exams while economic entrepreneurship students use groups on social networks for exchange of information and use social networks for getting information about the study itself.

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