

An approach to using Instagram in secondary education

**Danijela Stojanović¹, Zorica Bogdanović¹, Marijana Despotović-Zrakić¹,
Tamara Naumović¹, Miloš Radenković²**

¹Faculty of Organizational Sciences, University of Belgrade, Jove Ilića 154, 11000
Belgrade, Serbia

School of Computing, Union University, Knez Mihajlova 6/6, 11000 Belgrade, Serbia,
E-mail: danijela.stojanovic[at]ien.bg.ac.rs, zorica[at]elab.rs, maja[at]elab.rs,
Tamara[at]elab.rs, milos[at]elab.rs

Abstract

In this paper, the authors study the possibility of applying Instagram in education and increasing the level of knowledge of high school students. The use of the Instagram app aims to motivate students to gain and improve knowledge of economics, develop environmental awareness and increase awareness of the importance of caring for their health using modern services. The possibility of improving the teaching process in secondary education by introducing mobile and pervasive technologies that would make the teaching process more effective and attractive to students was tested by posting "Challenges" on Instagram. This paper presents the research that was done with students of the third grade of secondary vocational school in the period March - May 2019

Keywords: Instagram, secondary education, e-education, social media

1 Introduction

Social networks and mobile technologies have become an integral part of the lives of a large part of the world's population. Historically, mobile technologies and social networks were originally used for entertainment, personal needs and direct communication. Over time, these technologies have become widely used in business communication and collaboration. Today, there is an increasing trend in the use of these tools in teaching, as well as a growing interest of the academic community and a growing number of diverse studies on these topics (Arceneaux & Dinu, 2018a). The basic idea is to reach a level where mobile devices and applications are not considered a problem in the educational process, but as a tool available to lecturers to advance educational practice.

There is an obvious ubiquity of using mobile and smart technologies in education, both formal and informal, as well as increasing interest of the academic community for research in this field. The main idea is to achieve a level where mobile devices and applications are not considered as a distraction but as a tool for improving the practice of teaching and learning (Stojanović, Bogdanović, & Nedeljković, 2016).

Social media uses mobile and web technologies to create interactive platforms through which individuals and communities share, create and modify content generated by users (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011).

The most important social media are (Dewing, 2010):

- Blog - one of the first and most basic social media, easy-to-create online blog form. It is organized chronologically and accessible to a large number of users, enabling them to express their opinions, views, as well as the ability to link to other blogs and online articles;
- Wiki - a collective website where participants can create new content or modify existing content. The most famous example of using wiki technology is Wikipedia;
- Bookmarking - allows users to organize and share links to other websites;

- Social Networks - Web services that allow users to create public or semi-public profiles, create lists of users with whom they share certain content, and view a list of user activities to which they are associated(Boyd & Ellison, 2007);
- Microblogging - allow users to share short messages in a form of a post and view other users' posts;
- Content sharing sites - Users can post and share content such as videos or photos (e.g. YouTube and Instagram).

When educational institutions recognized the potential of using social media as a marketing and educational tool, the idea of using social media gained importance(Gilroy, 2010). Social media allows learning to take place regardless of physical location and to make the learning process creative, thanks to social interaction and online collaboration.

Through sharing information, knowledge and experience using various tools, social media users learn from each other and receive social support by participating in online activities and interacting with other users(Hajli, Bugshan, Lin, & Featherman, 2013;Labus, Simić, Barać, Despotović-Zrakić, & Radenković, 2012).

The paper presents an idea based on Instagram challenges that were realized in e-commerce classes at a high school of economics, where students were given a new form of learning through the Instagram social network. After completing the challenge, students completed a survey on the general use of the Instagram social network, its use for educational purposes, and specific questions about the challenge. Based on the results of the challenge analysis and the survey, conclusions were drawn and will be presented below. The methodology, as well as a full description of the challenges posed to students were also presented.

Social networks have great potential and it is necessary to react in a timely manner to harness this potential. The paper presents some of the benefits of integrating social networks for educational purposes and provides suggestions for possible ways to use them.

2 Literature review

Academic research on the use of mobile devices and social networks in the field of education has intensified since 2005, with the most commonly analyzed student population followed by primary and secondary school students. The most commonly analyzed social networks used in the education process are Facebook, blogs, Twitter and Instagram (Tess, 2013).

Statistics show that 88% of college students in America use social networks(Newberry, 2019). In Serbia, it is estimated that 75% of people between the ages of 18 and 24 have a profile on one of their social networks(Jevtić & Zelenović, 2015). As this number grows year by year, it is necessary to consider how and whether it is possible to use social networks to assist students in education.

The first surveys were conducted in the developed Western countries, where mobile technologies first came to life, while more recent research is increasingly covering the fields of developing societies. In addition to analyzing the practice and efficiency of conducting the education process through mobile technologies and social networks, a great deal of research has included the development of specific applications for the specific educational needs of the analyzed sample(Mavroudi, Divitini, Gianni, Mora, & Kvittem, 2018). The ultimate goal of applying individual research is most often identified in the advancement of the entire state education system, after synchronized education of trainers, improvement of access to mobile technologies and the Internet and motivation of students and students to use modern technologies for the purposes of acquiring and sharing knowledge and familiarity with the curriculum and activities.

The largest number of studies conducted so far on the use of mobile technologies in the field of education has shown that these devices have a positive impact on the effectiveness of learning in secondary schools and colleges(Wu et al., 2012;Al-Bahrani & Patel, 2015;Kassens, 2014).

Previous research has shown that students use modern technology the least in the field of education and learning, although they state that they are very open to the future application of these technologies in learning (Roblyer, McDaniel, Webb, Herman, & Witty, 2010). With regard to the way students use mobile technologies in the field of education, academic research has shown that internet content is interchangeable, combined, and created by new users (Halder, Halder, & Guha, 2015). Internet enables simpler way of work collaboration for solving problems posed by a senior lecturer. In addition to the process of learning and sharing knowledge, mobile technology can also be used to facilitate the organization of teaching activities and the communication of professors and students (Arceneaux & Dinu, 2018b). The intensity of the use of modern technologies in the field of education is increasing with the greater engagement of teachers and their inclusion on social networks, which are already used by students (Timothy, Jeffrey, Kaitlyn, & Margarita, 2016). Social media has proven particularly effective in specific vocational schools, such as information technology, language, or medical schools.

Although great benefits are expected from the use of mobile technologies and social networks in the field of education, some studies have shown that there is sometimes aversion towards the use of these technologies for learning by students (Al-Bahrani, Patel, & Sheridan, 2015). The reason behind this aversion is a desire to isolate private and “student” lives and the fear of being overwhelmed by the always accessible and practically unprecedented content. In addition, a large number of teachers take a cautious approach to the use of modern technologies for educational purposes. The fear of various types of abuse, cheating in the learning process and other psychological, pedagogical and social consequences of using these technologies are some of the reasons for teachers to be distrustful towards the usage of modern technologies for educational purposes (Veletsianos & Navarrete, 2012; Stojanović et al., 2016).

2.1 Instagram in Education

Instagram is a free app that was released in October 2010. The application is primarily intended for use through mobile devices, but there is also the possibility of access through other platforms. The main functionality is that it allows users to process and share photos and videos, both within the app itself and on other social networks if they link their account from the app to accounts on other social networks. In addition to these features, Instagram is getting a new one in 2013, an Instagram story that allows users to share videos for up to 15 seconds that are visible to other users for the next 24 hours. Recently, Instagram television functionality has also been introduced, allowing users to post videos longer than 60 seconds. (Instagram, 2019).

Instagram is considered the fastest growing app in the world. In 2017, it was reported that Instagram has 700 million active users per month (Rouse, 2019). In addition to users using the app for personal use, it is estimated that around 2 million advertisers worldwide use Instagram to promote their business or products (Clarke, 2019). Statistics today show that Instagram has a billion active users a month, and more than 500 million use the app every day (Clarke, 2019). Of the total application users, 71% are under 35 (Clarke, 2019) and 53% of users are in the 18- to 29-year range (Bischoff, 2016) which is the student age range. As many as 500 million users use Instagram stories every day (Clarke, 2019).

There are a myriad of possibilities for how social networks can be used for educational purposes, especially Instagram. As a platform that provides the ability to communicate through photos and videos, it is well suited to convey any message.

3 Methodology

The research was conducted as part of the e-commerce course at the Secondary School of Economics, in the second semester of the academic year 2018/2019, and lasted between March and May 2019. It involved participating students in various activities on the Instagram social network and then completing a survey related to the activities mentioned.

3.1 Procedure

For the purpose of this research, an Instagram “campaign” was conducted that lasted for three months, from March to May 2019. The Instagram "campaign" was divided into sections that presented interactive challenges, followed by an Instagram announcement marking the beginning of the challenge. Students in the subject of e-business were informed about the implementation of the "campaign" and presented the benefits of successful participation in it. Following the "campaign", a survey was made that covered both Instagram usage in general and for educational purposes, as well as questions regarding the specific Instagram "campaign" we conducted.. The campaign covered two challenges:

- Learn a new word and explain their meaning
- Clean environment, healthy environment

Students in the e-business course had the right to participate in the challenges. All students took an active part in all the challenges during the "campaign" and were rewarded with additional points on the subject in accordance with their engagement.

3.1.1 The first challenge - Learn a new word and explain their meaning

The first in a series of challenges was a challenge “Learn a new word and explain their meaning”. The challenge was announced the day before via an Instagram story, and on the very day the challenge began with a post that illustrated an example of a successfully fulfilled challenge. The task could be completed within the next 5 working days.

The idea behind this challenge was for students to write as many words in economics as they thought were relevant and needed to be known. Students posted the words to their Instagram profiles with the hashtag #naucinovurec.

Since the challenge appealed to the students, it was extended for another 5 days. The new assignment was to write words that they felt they needed to learn and relate solely to the modules the students were learning in the subject of e-business. They posted the words on their Instagram profile with the hashtags #e-business, #e-commerce, #e-banking.

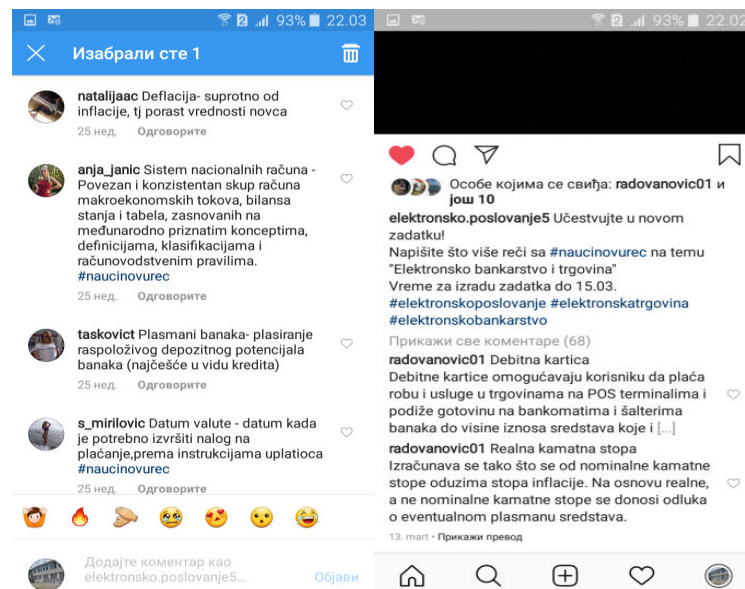


Figure 1. An example of a challenge

3.1.2 The second Challenge -Clean environment-healthy environment

The second in a series of challenges was a "clean environment-healthy environment" The challenge was announced the day before via Instagram story, and on the very day the challenge started with a post that illustrated an example of a successfully fulfilled challenge, and which described all the requirements related to the challenge. The task could be completed within the next 5 working days.

The idea behind this challenge was to show examples of healthy and clean environments through the image or video as well as the development of environmental awareness among students. The students were tasked with giving an example of the contaminated environment they noticed in their surroundings and suggesting that they should "solve the problem". Participants posted related content to their Instagram stories with the hashtag #healthyenvironment.

4 Results analysis

The Instagram "campaign" consisted of two challenges and lasted a total of three months. After each challenge, the participants' published solutions were saved in prominent stories on the school's Instagram profile, so that the results could be tracked even after each challenge had been completed.

The Instagram story as functionality offers a lot of information about whether the content was liked by the users, how many of them saw the particular content, whether they shared, saved or similar. All of this is of great importance for our research, and below we will process the data for each challenge individually. More than 30 people followed the profile during the campaign. Following the "campaign", a survey was conducted for each of the challenges. Survey included several questions that could be answered by circling one out of five options: 1 – totally disagree, 2 – disagree, 3 – neither disagree nor agree, 4 – agree, 5 – totally agree. The results of the survey will be presented as well, for each challenge individually.

Table 1 *Learn a new word and explain their meaning*

Question	Mean score	Standard deviation
It helps me learn something new.	4.46	0.92
It helps me be more productive.	4.11	0.86
It helps me to learn the given material..	3.84	0.89
It gives me more control over the learning activities.	4.05	0.73
Teachers should encourage the use of the app for educational purposes.	4.24	0.91
It's fun to use it for educational purposes.	3.92	0.82
It gives me more motivation to complete the task at hand.	4.19	0.83

The results from Table 1 show that the students find the application useful to learn something new (4,46), but do not find it to be fully appropriate to learn the given material within the individual modules (3,84).

Table 2 *Clean environment, healthy environment*

Question	Mean score	Standard deviation
The development of environmental awareness among students is essential	4.51	0.60
I think the challenge is interesting	4.46	0.79
I don't think the challenge makes sense	3.78	0.99
The challenge motivated me to think about ecology	4.00	0.96
The challenge motivated me to stay more in nature	4.24	1.08
Teachers should encourage students to use Instagram for educational purposes.	4.30	0.98

The results in Table 2 show that students consider the development of environmental awareness in students important (4,51), but do not find the challenge fully meaningful (3,78).

4 Conclusion

This paper is an example of the possibility of applying Instagram in the high school education process. The students of the third grade of secondary economic school participated in the research. The goal was to motivate students to expand their knowledge of economics, develop an awareness of the importance of environmental conservation, and increase care for their health by using a step-measuring application. The main advantages of using Instagram in education are the ubiquity of student use of the app, its ease of use, and the great daily use of mobile phones by students.

Future work will focus on the development of multiple tasks and a complete technical and educational evaluation of the system.

Acknowledgement

Authors are thankful to Ministry of education, science and technological development, grant numbers 174031 and 179015.

References

- Al-Bahrani, A., & Patel, D. (2015). Incorporating Twitter, Instagram, and Facebook in economics classrooms. *The Journal of Economic Education*, 46(1), 56–67.
- Al-Bahrani, A., Patel, D., & Sheridan, B. (2015). Engaging students using social media: The students' perspective. *International Review of Economics Education*, 19, 36–50.
- Arceneaux, P. C., & Dinu, L. F. (2018a). The social mediated age of information: Twitter and Instagram as tools for information dissemination in higher education. *New Media & Society*, 20(11), 4155–4176.
- Arceneaux, P. C., & Dinu, L. F. (2018b). The social mediated age of information: Twitter and Instagram as tools for information dissemination in higher education. *New Media & Society*, 20(11), 4155–4176.
- Bischoff, M. (2016). 15 Universities That Are Nailing It on Instagram (And What You Can Learn from Them) - eCity Interactive. Retrieved from <https://www.ecityinteractive.com/blog/14-universities-that-are-nailing-it-on-instagram-and-what-you-can-learn-from-them/>
- Boyd, D. M., & Ellison, N. B. (2007). Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication*, 13(1), 210–230.
- Clarke, T. (2019). 22+ Instagram Statistics That Matter to Marketers in 2019. Retrieved from <https://blog.hootsuite.com/instagram-statistics/>
- Dewing, M. (2010). Social media: An introduction. Retrieved from <https://quotebanq.com/wp-content/uploads/2018/05/Social-Media-An-Introduction.pdf>
- Gilroy, M. (2010). Higher Education Migrates to YouTube and Social Networks. *The Education Digest*, 75(7), 18–22. Retrieved from www.eddigest.com
- Hajli, M., Bugshan, H., Lin, X., & Featherman, M. (2013). From e-learning to social learning – a health care study. *European Journal of Training and Development*, 37(9), 851–863.
- Halder, I., Halder, S., & Guha, A. (2015). Undergraduate students use of mobile phones: Exploring use of advanced technological aids for educational purpose. *Journal of Media and Communication Studies*, 7(4), 81–87.
- Jevtić, J., & Zelenović, J. (2015). Internet and social networks in the promotion of higher education institutions. *Ekonomija: Teorija i Praksa*, 8(2), 17–30.
- Kassens, A. L. (2014). Tweeting Your Way to Improved #Writing, #Reflection, and #Community. *The Journal of Economic Education*, 45(2), 101–109.
- Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54(3), 241–251.
- Labus, A., Simić, K., Barać, D., Despotović-Zrakić, M., & Radenković, M. (2012). Integration of social network services in e-education process. *Metalurgia International*, 17(7).

- Mavroudi, A., Divitini, M., Gianni, F., Mora, S., & Kvitem, D. R. (2018). Designing IoT applications in lower secondary schools. *IEEE Global Engineering Education Conference (EDUCON)*, 1120–1126.
- Newberry, C. (2019). 130+ Social Media Statistics that Matter to Marketers in 2019. Retrieved from <https://blog.hootsuite.com/social-media-statistics-for-social-media-managers/>
- Roblyer, M. D., McDaniel, M., Webb, M., Herman, J., & Witty, J. V. (2010). Findings on Facebook in higher education: A comparison of college faculty and student uses and perceptions of social networking sites. *The Internet and Higher Education*, 13(3), 134–140.
- Rouse, M. (2019). What is Instagram? - Definition from WhatIs.com. Retrieved from <https://searchcio.techtarget.com/definition/Instagram>
- Stojanović, D., Bogdanović, Z., & Nedeljković, N. (2016). Upotreba mobilnih tehnologija u srednjoškolskom obrazovanju. *Zbornik Radova XLIII Simpozijum o Operacionim Istraživanjima - SYM-OP-IS 2016*, 71–74.
- Tess, P. A. (2013). The role of social media in higher education classes (real and virtual) – A literature review. *Computers in Human Behavior*, 29(5), A60–A68.
- Timothy, P. G., Jeffrey, B., Kaitlyn, L., & Margarita, V. D. (2016). Delivery of educational content via Instagram. *Medical Education*, 50(5), 575–576.
- Veletsianos, G., & Navarrete, C. (2012). Online social networks as formal learning environments: Learner experiences and activities. *The International Review of Research in Open and Distributed Learning*, 13(1), 144.
- Wu, W. H., Wu, Y. C. J., Chen, C. Y., Kao, H. Y., Lin, C. H., & Huang, S. H. (2012). Review of trends from mobile learning studies: A meta-analysis. *Computers & Education*, 59(2), 817–827.