

Instagram as a collaborative e-learning tool in higher education

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Abstract— The social network Instagram is used daily by a lot of students. By using Instagram, they share photos and videos, communicate, comment and react to the content of other users. Apart from the current purpose of Instagram, we believe that it can also be used for educational purposes. The aim of this paper is to examine the possibility of using the social network Instagram as a support in the process of collaborative e-learning in higher education. The paper presents the methodological procedure of applying collaborative e-learning activities on Instagram in higher education. Collaborative e-learning activities are organized in the form of challenges and quizzes, with the aim of encouraging creativity and motivation of students to learn, as well as collaboration through mutual interaction in assessing responses to challenges.

Keywords—Instagram, collaborative e-learning, education

I. INTRODUCTION

The influence that social media have in different spheres of society (eg. politics, economics, sports and communication) is also recognized in the educational context. Higher education is undergoing changes due to the influence of social media [1]. Using social media as a mean of communication and learning assistance is recognized as a good practice in higher education [2], [3]. Social media, especially Facebook, and more recently Instagram, have become a useful e-learning tool that allows students to communicate, collaborate, search, and share educational content [4]–[6]. Numerous studies show that learning based on the social media usage has the effect of encouraging joint learning, increasing motivation, as well as achieving better learning outcomes [7], [8].

Higher education institutions use various social media as platforms to promote study programs, improve distance learning processes, communicate in real time, interact with students and to manage student relationships (Student Relationship Management) [2], [3]. A large number of students use social media for informal education [2], [3], [9]–[11]. Different scientific studies have shown that it is possible to use social media in the context of formal education as a personal learning environment [9].

Through social media users are provided with the opportunity to connect based on their interests, sharing and viewing a large amount of multimedia content, experience

and knowledge [2], [3]. In addition, social media are used as the main tool in marketing when building a brand on the Internet, attracting new website visitors, as well as interacting with existing users [4].

In recent years, there has been a growing trend of the use of social media as an aid to formal education, although they were not initially created for these purposes. [6], [12]–[14]. The introduction of social media in the learning process offers the possibility of creating such content that will encourage students to communicate, engage and collaborate [8], [15], [16]. Professors establish a direct channel of communication with students, which enables the provision of relevant information related to subjects and exams, and through social media they can construct encouraging and motivational learning environment for students through various activities [16], [17]. The use of social media as an aid to e-learning in higher education institutions is an important factor in improving the application of acquired knowledge in practice. A sense of belonging to a particular community is an important element for successful e-learning [18].

Research shows that students use social media more often than email or other forms of communication as an e-learning support [15]. The idea behind the use of social media in the educational process is based on research that has shown that teenagers and youth (in their early twenties) use social media more than any other age group. [19]. The Instagram platform is one of the most commonly used platforms for sharing content (photos and videos) in the student population. Based on the results of the conducted studies, it can be concluded that the sharing of content on this platform contributes to a positive learning outcome, especially for students with a visual learning style [20]. The importance of using the Instagram platform as a support to informal education has been the subject of analysis of numerous scientific papers [5], [15], [21].

Social network analysis (SNA) provides both visual and mathematical analysis of human relationships and collects information that help in market analysis, business decision making, research of marketing activities, determining affirmed users of a certain social network, and other similar requests [22].

The term distance learning has produced concepts such as online learning, e-learning, web-based learning,

collaborative learning, virtual learning and others, that has defined the way of distributing educational material.

The most general definition of collaborative learning is a situation in which two or more people learn, or try to learn something together. Some scholars consider “learning” to be any joint activity in the context of education (studying materials, sharing course assignments), while others consider it to be a side effect of joint problem solving [23].

II. COLLABORATIVE E-LEARNING ON SOCIAL MEDIA

The term distance learning has produced concepts such as online learning, e-learning, web-based learning, collaborative e-learning, virtual learning and others, that has defined the way of distributing educational material. Constructing knowledge, negotiating meanings, and/or solving problems through mutual engagement of two or more students in a coordinated effort using Internet and electronic communications.

The use of social media and collaborative e-learning system increase productivity and students engagement in the learning process.

Instagram can become a great educational tool that makes the educational process unique and interesting. Many activities can be done using Instagram in learning. Using this tool, students can exchange opinions and views on different topics. Students can also participate in a group activity where each student asks the others to comment on a photo or video. This allows them to share knowledge with colleagues and teachers [24].

III. METHODOLOGICAL PROCEDURE FOR APPLYING COLLABORATIVE E-LEARNING ON INSTAGRAM

Methodological procedure consists of preparing challenges, posting on social networks, monitoring responses to challenges, setting up surveys and analyzing results. To begin with, it is necessary to define the topics of the challenges, as well as the rules of participation in them. For each challenge, it is necessary to create an Instagram post and a story to announce the challenge and define the deadline for posting answers.

After announcing the challenge, the students' answers are followed and shared by those who have successfully answered the given topic. A slider is placed on each answer, with which other students evaluate a certain answer.

The fourth challenge is different from the others. It is a quiz that is set in the form of a poll on an Instagram story every day.

After the implementation of all four challenges, a survey is set on the moodle course, in order to record points for participation, as well as to receive feedback from students in order to improve future campaigns.

The results of the challenge were analyzed using Instagram Insights and VOSviewer tools.

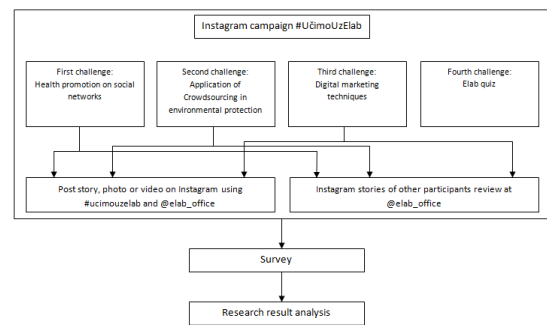


Figure 1: Methodological procedure

IV. APPLICATION OF COLLABORATIVE E-LEARNING ON INSTAGRAM IN HIGHER EDUCATION

A. Preparation of challenges and rules of participation

The Instagram campaign #UčimoUzElab was conducted on the profile of the Department of Electronic Business (@elab_office). It consisted of three challenges and one quiz. Challenge announcements are posted in the form of posts on the Instagram profile once a week. Students posted the answers to the challenges in the form of stories on their profiles by tagging the profile of the department and setting the appropriate hashtags.

The Elab quiz consists of 5 questions that are published in the form of surveys on the Instagram stories of the Department's profile.

In order for a student to participate in the campaign, I need to follow the Instagram profile of the Department of E-Education and adequately respond to the topics of the challenge by posting an appropriate photo or video as a story or post on the profile. Challenge responses must include the hashtag #ucimouzlab and the @elab_office profile tag.

The motivating factor for students to participate in the campaign are the additional points obtained in the subject of Internet marketing. Points are awarded as follows:

- Each challenge carries one point.
- Collaborative activity carries one point. It is achieved in the form of assessing the response to the challenges of other students by selecting the percentage of fulfillment of the task requirements.
- Answering all five questions of the quiz brings one point.
- Responding to campaign-related posts brings extra points.

B. Setting challenges



Figure 2: Announcements of the challenges

The campaign consists of three challenges on the topics: “Health promotion on social networks”, “Application of Crowdsourcing in environmental protection” and “Digital marketing techniques”. Challenges were set on Tuesdays and students were able to respond to each of them for 7 days.

C. Responses of students to challenges

Students responded to the challenges by posting Instagram stories on a given topic and tagging the Department’s Instagram profile.

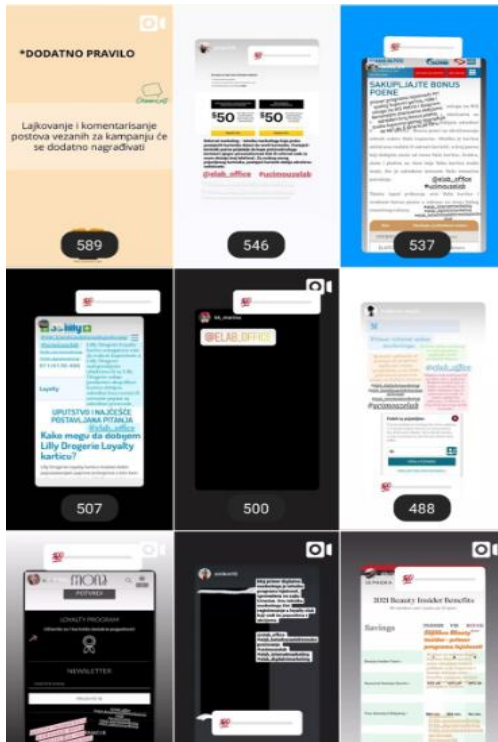


Figure 3: Demonstration of the solution to the first challenge

D. Mutual evaluation and comments – collaborative activities

Each answer to the challenge that meets the given conditions was shared on the Instagram story of the Department's profile. A slider is placed on each split answer. Using a slider, other students evaluate the percentage of completed answers to a given topic. In addition, students respond to Instagram stories by expressing their opinions, which encourages collaboration.

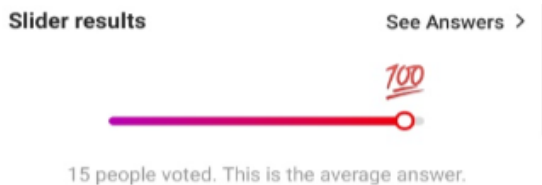


Figure 4: Slider results

E. Quiz

After completing all three challenges, a knowledge quiz was published. The quiz was conducted in the form of surveys on Instagram stories, and the questions were on the topics of previously conducted challenges.

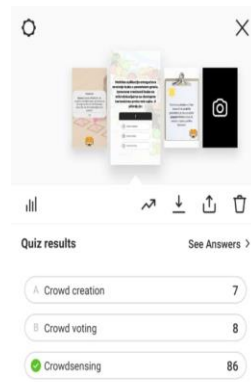


Figure 5: Elab quiz – 1. question

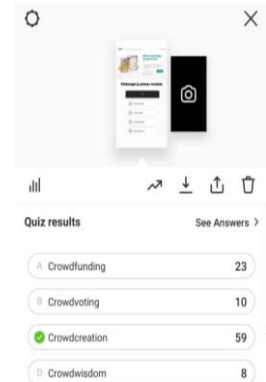


Figure 6: Elab quiz – 2. question

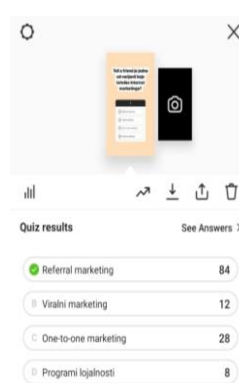


Figure 7: Elab quiz – 3. question

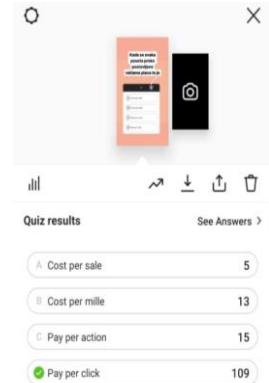


Figure 8: Elab quiz – 4. question

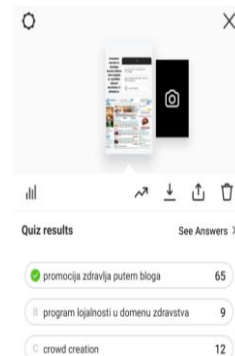


Figure 9: Elab quiz – 5. question

F. Survey

After the Instagram campaign, a survey will be conducted on the Moodle platform, because the research was done during the summer semester of this school year.

It aims to determine readiness and motivation of students to use Instagram for this type of learning.

G. Analysis of results

The collection of results was done by marking the mutual interaction of all students so that the evaluation of someone else's response, depending on the slider, was evaluated from 0 to 5. After that, using the SNA tools Social Network Visualizer and VOSViewer. Changes in followers, interactions, and user demographics are tracked using Instagram Insights.

A total of 108 students participated in all three challenges, and 1269 interactions were achieved.

By using VOSViewer tool, user interactions are displayed. Nodes represent student profiles, and directional lines represent their interaction with each other. Depending on the number of interactions, the nodes (profiles) and the corresponding lines (interactions) are colored in different colors and displayed in different node sizes.

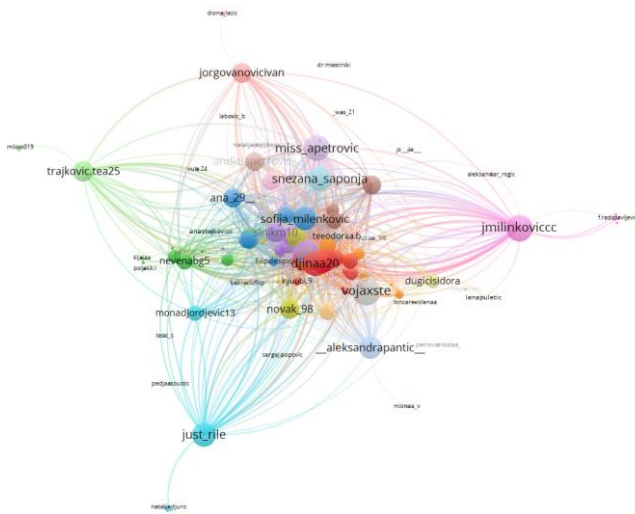


Figure 10: Analysis of results using VOSViewer

The lines between the nodes show the interactions between the students. Contrary to the presentation of a large number of lines in Figure 10, we can conclude that there was a large number of mutual interactions of students during the fulfillment of challenges, and thus collaborative learning was achieved.

Instagram Insights is a free tool within Instagram. It is used to monitor all activities, interactions and profile visits, analysis of demographic characteristics of profile followers, as well as analysis of interactions with each profile post. In order to be able to use this option, it is necessary for the profile to be "business".

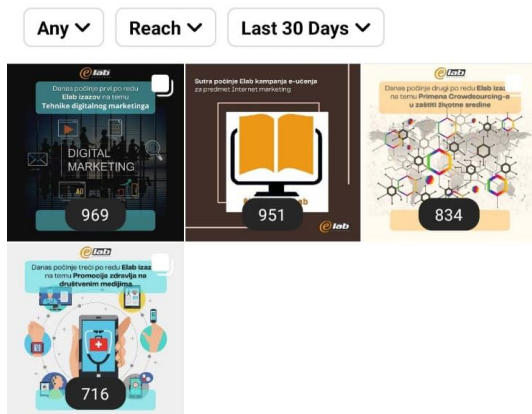


Figure 11: Challenge announcements

The increase in reach to the companion profile is evident. After first challenge, the reach was as high as 917 users. The number of impressions increased by 438% compared to the previous week, and the profile was visited 910 times, which is 335.4% more than the previous week.



Figure 12: Instagram Insights

H. Conclusion

At the Department of Electronic Business, at the Faculty of Organizational Sciences, in the school year 2020/2021, an educational Instagram campaign was conducted on the subject of Internet marketing. The goal of the campaign is to educate students on the topics of Digital Marketing Techniques, Application of crowdsourcing in environmental protection and Health promotion on social networks.

Analyzing the results of this campaign showed a great interaction between students, and thus the implementation of collaborative learning. Students evaluated each other to what extent they met the given challenges.

The results were collected by reviewing the ratings on the slider of each story, and analyzed using Instagram Insights, as well as the SNA tool VOSviewer

For further activities of the Department for e-business, the plan is to use, in addition to the social network Instagram, TikTok for educational purposes, and other SNA tools for research result analysis.

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