

Social Networks as Tools to Promote the Majors of Higher Education Institutions During the Pandemic

Zhanna Myna and Tetiana Bilushchak

Lviv Polytechnic National University, 12 S. Bandery str., Lviv, 79000, Ukraine

Abstract

The current state of career guidance work and current issues that arise in this area in connection with the pandemic and the need for career guidance activities in new environment have been analyzed in the paper. The role of social networks as tools for promotion of various majors by higher education institutions has been shown. The communicative role of social networks in the period of the pandemic and the creation of the image of the higher education institution have been studied. The source base concerning the role of social networks in presenting the activities of higher education institutions and promotion of their majors has been processed. Social network Facebook, its features, advantages and disadvantages have been described. We have proved the positive role of social networks for the involvement of young people through the creation of interesting content, as well as the fact that creating a page on social networks, filling it with interesting information about scientific and creative life of students and teachers has a positive impact on the balanced choice of future profession by applicants. The importance of implementing the principles of continuing education has been emphasized. The analysis of promotion of majors by institutions of higher education on social network Facebook has been carried out. The Facebook community "Information, Library and Archival Science", created at the Department of Social Communications and Information Activities of the Lviv Polytechnic National University, which includes teachers, prospective applicants, students and all interested parties, has been presented. A functional model of the major promotion task has been developed

Keywords1

Social networks, promotion, higher education institutions, pandemic, career guidance, Functional model, Facebook

1. Introduction

Today, the possession of information and the ability to present it correctly plays an important role in the activities of any organization. Quite often, we can feel a lack or excess of information from various sources. In case of its excess, there is another challenge - the ability to select the necessary data and systematize them correctly. Therefore, to establish close relationship with the target audience and draw attention to the activities of an organization, a more effective method is to fill the page with information on social networks. The use of such methods is an affordable, cost-effective solution to the problem of promoting university activities and career guidance work, especially during the pandemic. In order for social networks to take their place in the scientific and technical sphere, they follow from the current initial state of development to becoming an important and necessary tool for social communication of the information society. Therefore, the researchers are searching for the use of social networks to encourage young people to acquire new knowledge; implement the principles of continuing education; create interesting content that will provide students with high-quality additional

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EMAIL: zhanna.v.myna@lpnu.ua (Zh.Myna); tetiana.m.bilushchak@lpnu.ua (T. Bilushchak)

ORCID: 0000-0001-7954-5799 (Zh.Myna); 0000-0001-5308-1674 (T. Bilushchak)

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knowledge. During the pandemic and isolation, the applicants are confused. A welter of information on the Internet, on the contrary, increases uncertainty and stress. Creating a page on social networks of some major, which would be filled with interesting information on scientific and creative life of students and teachers, would have had a completely different, namely positive impact on a balanced, calm choice of future profession by the applicant. An example of such information and advertising, career guidance activities may be the Facebook page of the major "Information, Library and Archival Science", created by students and teachers of the Department of Social Communications and Information Activities of the Lviv Polytechnic National University. The address of the page is <https://www.facebook.com/groups/193542484784742>, the administrators of which are the authors of this paper. The page is open, so all participants can share interesting posts, if they relate to the issues and the regulations and rules of the page.

2. Related Works

The analysis of recent research and publications shows that in recent years, many scholars have addressed and are addressing the issue of highlighting the role of social networks in the educational process of pupils and students. It is noteworthy that the study thoroughly analyzes both the positive and negative aspects of the use of social networks. However, it is undeniable that today it is an important tool and means of information support for young people in the educational process and professional choice during the pandemic. According to A. Vitushko [1], social networks are an environment with instantaneous speed of information dissemination and a rather strong memory effect. All official institutions from a regular college or university to the President of Ukraine are moving to an electronic form of communication, which is a successful marketing solution. In the paper by A. Yatsyshyn [2] it has been emphasized that social networks provide an opportunity for the formation of general competencies only if the educational process is carried out by specialists who fully possess the skills of communication on social networks. O. Shcherbakov, H. Shcherbyna [3] believe that the use of social networks for educational purposes leads to additional stimulation of student activity. Education must not lag behind the modern world and the needs of the job market. Therefore, according to the researchers, the introduction of social networks in the process of studies will improve the quality of education and provide a certain class of skilled employees for the trained job market. S. Ivashniova in her study [4] describes the social network as a virtual platform that provides with its means communication, support, creation, development, display and organization of social contacts, including the exchange of data between users, and necessarily involves prior creation of an account. Social network is defined by scientists such as A. Peleshchyshyn, Yu. Sierov, O. Berezko [5], as a Social networks service - a site that allows registered users to post information and establish connection. The use of social networks in higher education institutions promotes the exchange of information, increases the motivation of students [6, 7]. The study of the benefits of career guidance activities in social networks is found in the works [8, 9, 10, 11]. Research of social media platforms as a channel for promotion of advertising campaigns and communication with future students was studied in the works [12, 13, 14, 15]. The use of social networks to promote educational services of universities has been studied in scientific papers [16, 17]. The works [18, 19, 20] are devoted to the analysis of the role of social media in the educational process of pupils and students.

Analytical review of sources gives us a clear understanding of the importance and need for social networks in education. The emergence and development of Internet social resources have greatly contributed to the emergence of a new subculture of the Internet community and changes in information culture and education.

2.1. The main challenges facing higher education institutions during career guidance work on social networks

The use of social networks to cover information about the activities of higher education institutions and their career guidance work, especially in the face of the pandemic, is appropriate and affects the generation of reputation and trust. What is more, the feedback effect of students, applicants

on the activities of institutions through the social network strengthens the reputation, promotes majors in the coverage of news, events and changes that take place in education and student life in general. The ability to use feedback on social networks by increasing the trust of students, applicants is becoming particularly important and provides an opportunity to neutralize rumors or threatening news spread on the Internet. Therefore, departments should pay special attention to the possible prospects for the development of cooperation between students, applicants on the social network. However, you need to keep in mind certain rules for posting:

- publish posts at a convenient time for your audience;
- fill the page with interesting information;
- posts must be creative;
- add video, images on the topic to the page.

As domestic scholars have repeatedly noted, the issue of the regulatory and legislative framework remains important - the quality of laws and the ability to satisfy public and private interests of people. Laws are constantly amended and changed, which citizens have not heard of or given due importance to until they faced with them.

The role of career guidance is growing, and the level of its practical implementation is declining in parts, so it is necessary to move to active forms of career guidance work with a broad involvement of social networks. It is much cheaper because it does not require such costs as career guidance offline during the pandemic. The following main shortcomings of the organization of career guidance work can be singled out: the lack of career guidance specialists among the staff of secondary schools and other educational institutions; insufficient career guidance training of teaching staff; low level of appropriate logistical, informational and methodological support; lack of clear interaction between different participants in the career guidance process (the bodies of employment, public education, health care, etc.). Unfortunately, career guidance has not yet become part of the teaching and educational process at school. Therefore, the career guidance of higher education institutions should come to the fore. In addition, we have to state that career guidance activities are usually designed for the average student, but there is no individual, differentiated approach to personality; mostly verbal, declarative methods are used, without giving everyone the opportunity to try themselves in different activities. In general, the low level of information about the needs of society in personnel [8].

Important today is the issue of coordinating the efforts of professionals who aim to help the student in a conscious professional choice. It is proposed to introduce a career guidance course in the educational process. What should be the main content of such a course? Obviously, the content of such a course should primarily serve as a system-forming basis for the implementation of a set of organizational and pedagogical conditions for joint activities of the subjects of career guidance work in secondary school. Thus, it is necessary to form in student youth professional interests, motives, orientation and the simplest skills. Teachers and career counselors need to be encouraged to find opportunities for students to meet and develop personal professional interests. In addition, students should be prepared for the following:

- solve problems independently;
- be ready for self-education;
- use information resources;
- be ready for social interaction;
- have communicative competencies.

As for the purpose of career guidance, it is primarily the provision of social guarantees of free choice of professions, forms of employment and ways of self-realization of the individual in market relations. An important point to pay attention to is the achievement of a balance between the professional interests of a person and his/her psychophysiological characteristics, and taking into account the opportunities of the job market. By promoting a particular major, you need to show what success can be achieved in the future, give examples of successful graduates who have realized themselves in the chosen profession [8]. People are successful if they can realize their individual potential, and if they are constantly improving their knowledge and skills. The created pages on social networks that promote their majors must emphasize the criteria and skills that students will acquire by choosing a major by vocation and what are the opportunities for career growth with constant self-improvement.

3. Functional model of the task of promotion of majors by higher education institutions

The functional model is designed to reflect the peculiarities of the system functioning and its significance in relation to internal and external elements.

Data Flow Diagrams (DFD) are a means of simulating the functional requirements to the system being designed. With DFD, these requirements are broken down into functional components (subsystems, processes) and presented as a network connected by data flows.

The main purpose of DFD means is to demonstrate how each process converts its input data to the output ones, and to identify the relationships between these processes. The result of building a functional model of the system is a hierarchy of data flow diagrams that describe the asynchronous process of converting information from its input into the system to the issuance to the user.

With the help of DFD with the use of Gane-Sarson notation, the process of promotion of the major by higher education institutions on social networks (on the example of Facebook) has been modeled.

The context diagram contains one main process - "Promotion of the major on social network", which is connected with data streams to four external entities: "Page Administrator", "Deputy for career guidance department", "Applicants", "Head of Department" (Fig.1).

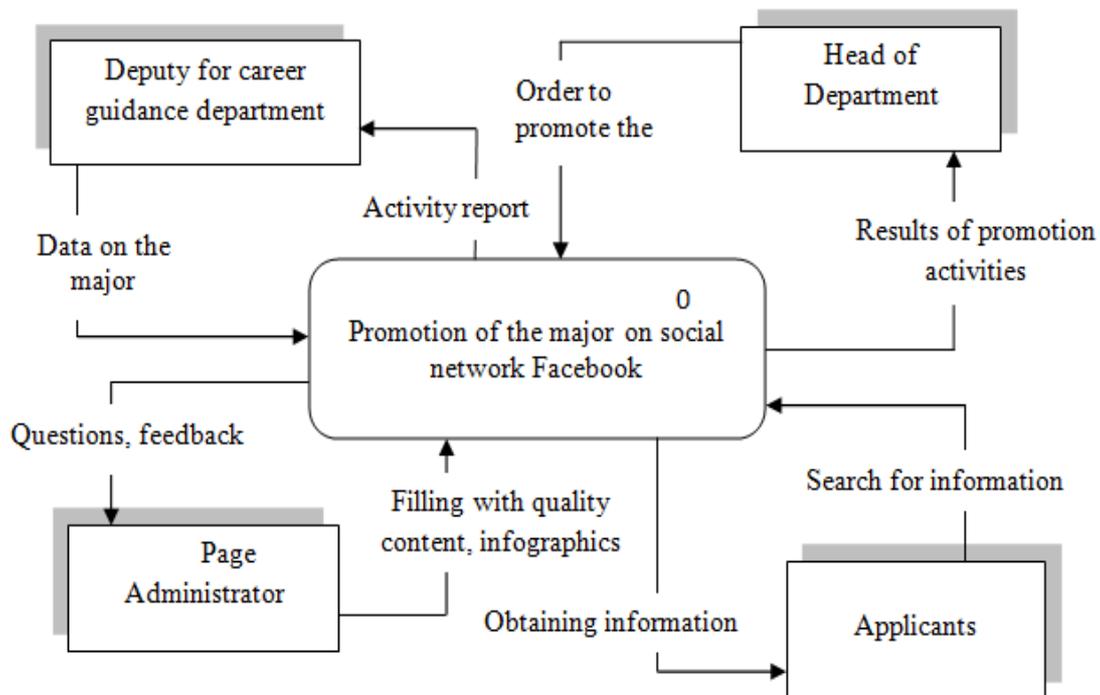


Figure1: Context diagram of the process of promotion of the major on social network

The external essence of the "Page Administrator" is a person who fills the feed on social networks - Facebook; studies general trends on social networks; moderates comments; makes original illustrations for the news; makes infographics.

The external essence of the "Deputy for career guidance work of the department" is a person who coordinates and advises on admission to the major.

The external essence of "Head of Department" is a person who is responsible for the management of the department and its successful activities (ensures the organization of the educational process, implementation of curricula and programs of courses, controls the quality of teaching disciplines, learning, teaching and research activities of teachers).

The external essence of the "Applicants" is a certain group of people with certain characteristics (age category, status, interest) who are likely to be interested in certain educational products or services.

When the context diagram is described, it should be detailed. The model is divided into smaller subsystems and each of them is described separately (Fig. 2).

Level 1 DFD of decomposing the process of "Promotion of the majoron social network" consists of three sub processes, namely: "Creating a page", "Development of information content of the page", "Process functioning of the page".

The sub-process "Creating a page" is the input of data on the major and, as a result, there is a report on the functioning of this page.

The sub-process "Development of information content of the page" is filling with quality content, infographics, so the page is searched for information by users, and consequently questions, feedback, and information from the search are obtained.

The sub-process "Process functioning of the page" involves obtaining an order to promote the page and, as a result, receives the result of promotion.

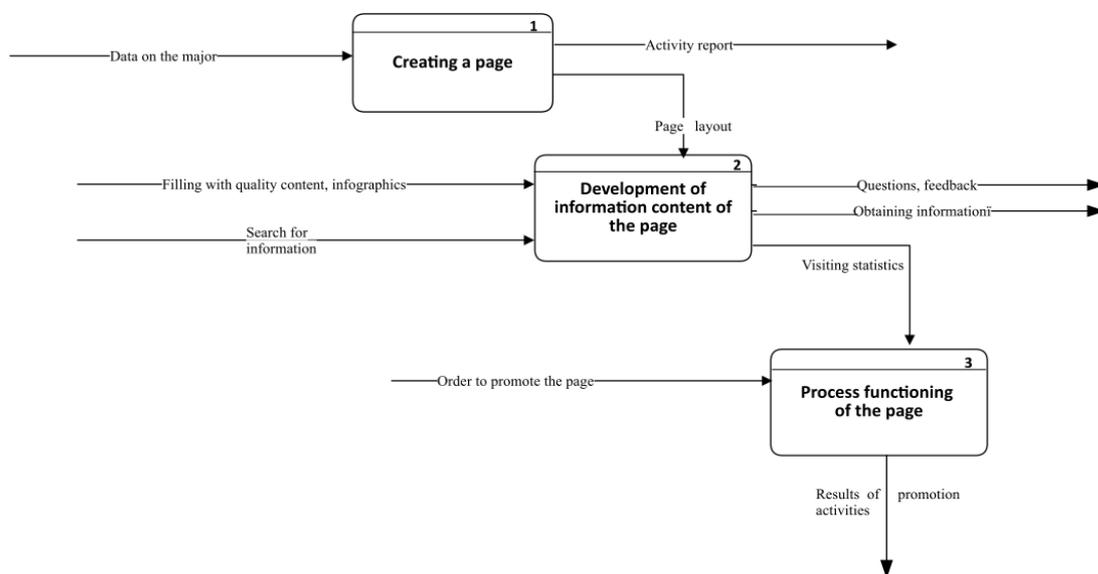


Figure 2: Level 1 DFD of decomposing the process of "Promotion of the majoron social network"

In order to carry out the practical implementation, each subprocess must be detailed. We decompose level 2 of the process of developing the information content of the page, which is shown in Figure 3.

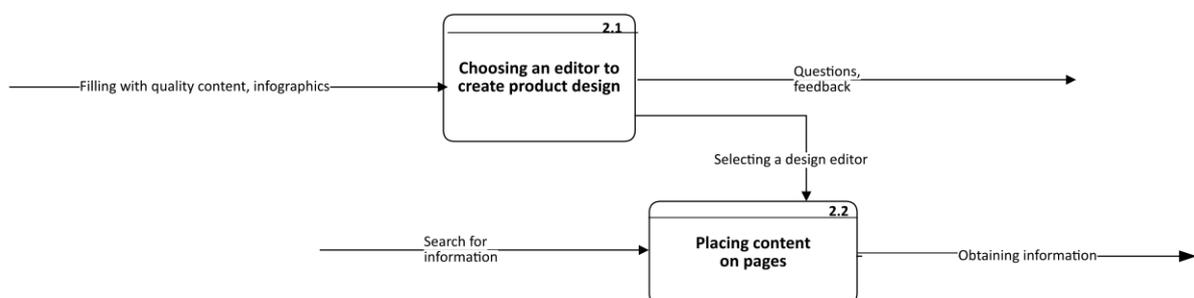


Figure 3: The second level of decomposing the process of developing the information content of the page

As you can see from the detailing, to fill with quality content and infographics you need to choose an editor to create a product design, as a result we get questions and feedback. After we chose the design editor, we place the content on the page where we get input information through information search and, as a result, we get information.

4. Analysis of the promotion of majors by higher education institutions on social network Facebook

This "ILAS (Information, Library and Archival Science)" page is designed to inform and promote the major "Information, Library and Archival Science" of the Department of Social Communications and Information Activities of the Lviv Polytechnic National University. There are 426 participants from Ukraine and abroad in this group (Fig. 4).

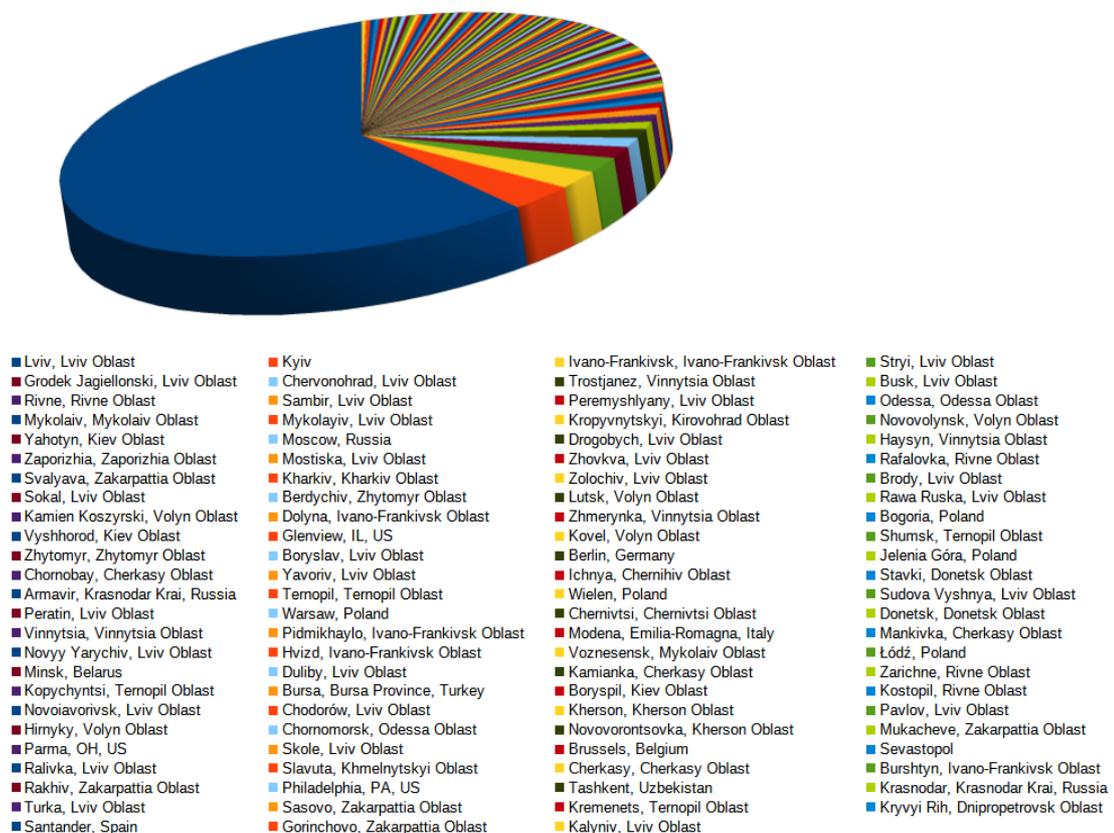


Figure 4: Number of the members from cities of Ukraine and the world who follow the "ILAS (Information, Library and Archival Science)" group on Facebook

According to the group's statistics, the number of participants following the group, as we mentioned above, is 426, 404 of them are from Ukraine, the rest – from abroad: Poland – 5, United States of America – 3, Russia – 4, Thailand – 2, Germany – 1, Belgium – 1, Uzbekistan – 1, Italy – 1, Spain – 1, Czech Republic – 1, Turkey – 1, Belarus – 1 (Fig. 5).

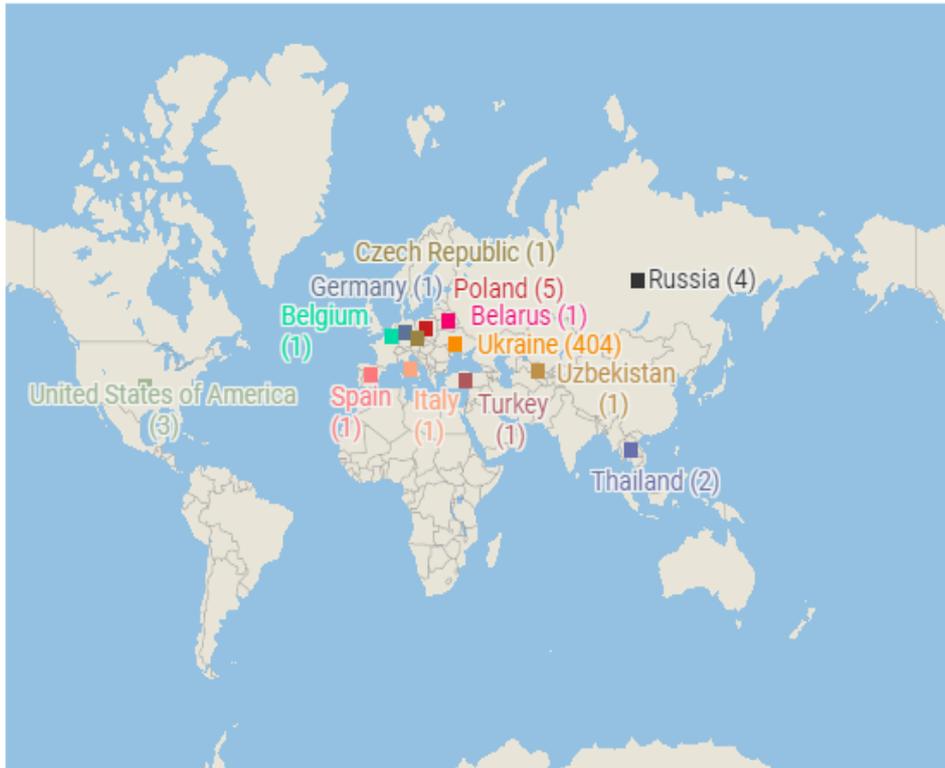


Figure 5: Number of the members of the countries following ILAS (Information, Library and Archival Science) group on Facebook

According to statistics, from December 14 to February 11, there were 346 active participants. The peak of activity was on December 22 and January 18. (Fig. 6).

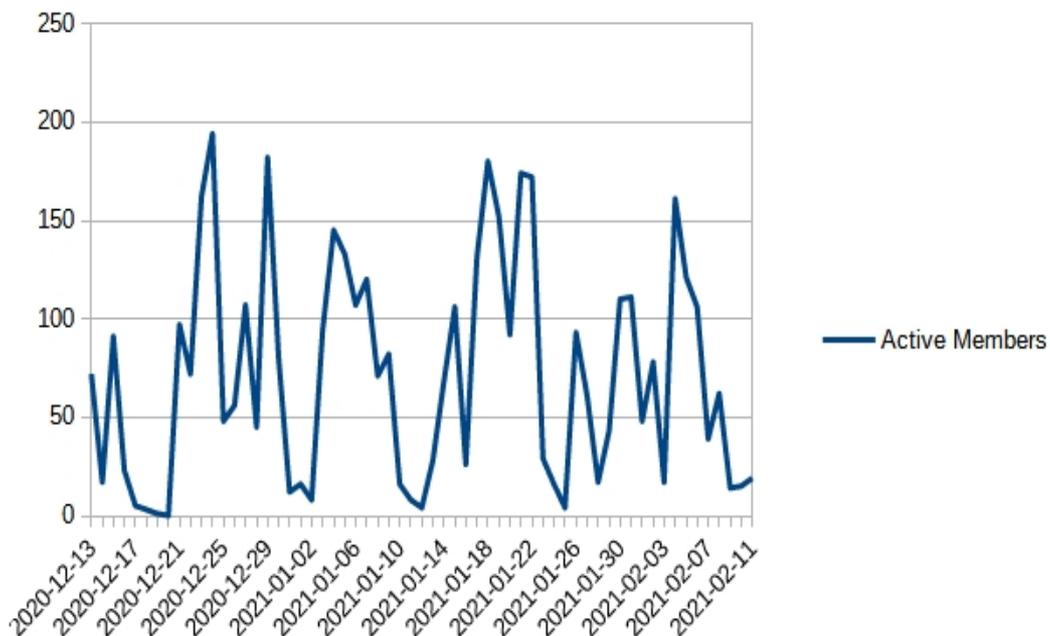


Figure 6: Activity of the members in "ILAS (Information, Library and Archival Science)" group on Facebook

The statistics of the involvement of group members observed from December 14 to February 11, 2021 shows good feedback: 47 Post, 31 Comments, 447 Reactions (Fig. 7).

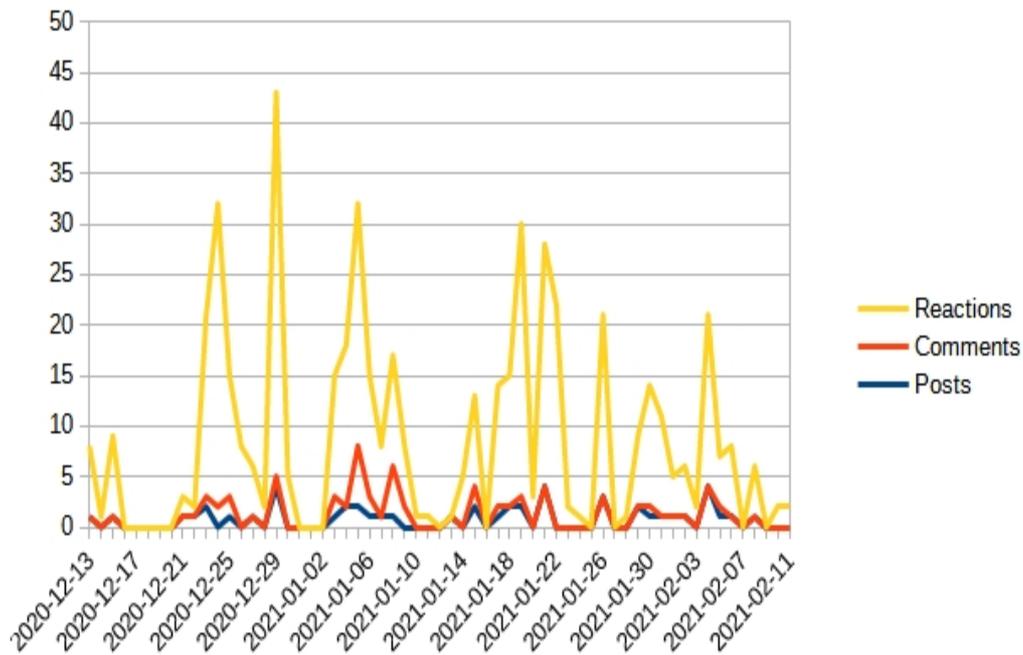


Figure 7: Statistics of activity of the members of "ILAS (Information, Library and Archival Science)" group on Facebook in a certain period of time

In the category "Sex of followers", we see the gender ratio of subscribers during the selected time.

Figure 8 shows that the largest involvement based on career guidance of the group is female in the range of 18-24 years, which makes – 35,30%.

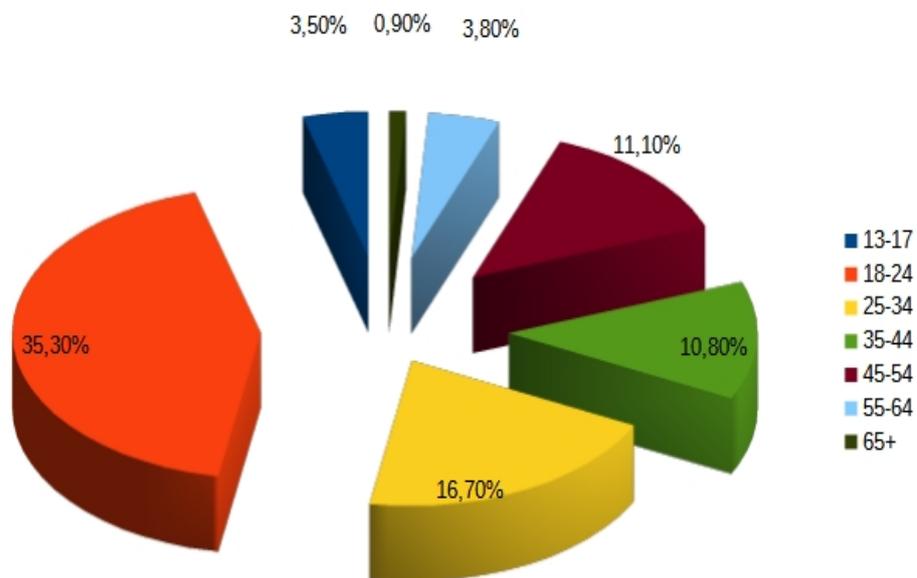


Figure 8: Age statistics of activity of the members of "ILAS (Information, Library and Archival Science)" group on Facebook (indicator by women)

In Fig.9 we see that the largest coverage of men in the range of 18-24 years – is 6,60%, but compared to previous figures for women, there is less men in this age statistic.

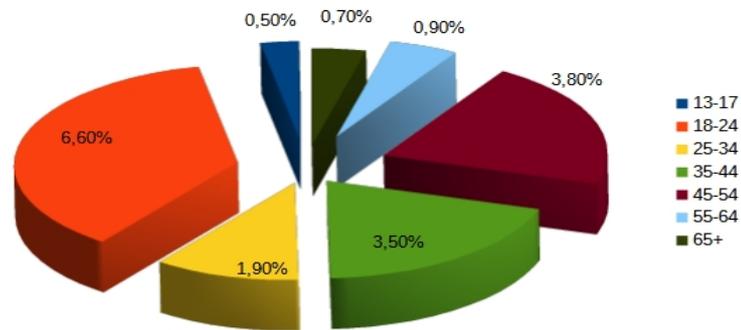


Figure 9: Age statistics of activity of the members of "ILAS (Information, Library and Archival Science)" group on Facebook (indicator by men)

We see that the audience of the page is mostly young, most likely students studying at the Department of Social Communications and Information Activities. Figure 10 shows the ratio of female to male by age between 13-17 years and 18-24 years.

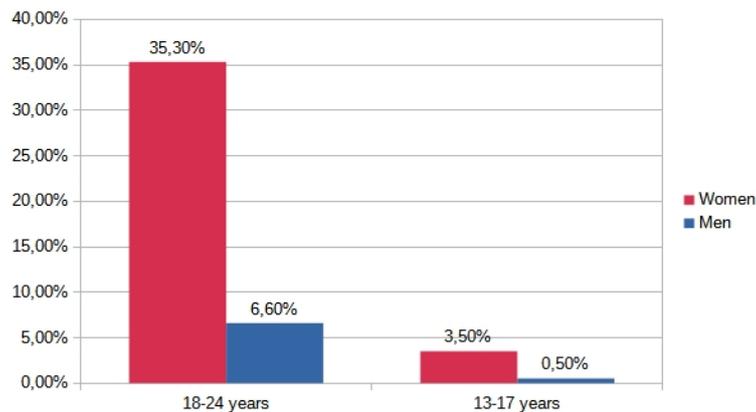


Figure 10: Distribution of the target audience by interested age and sex in career guidance activities on social networks

By the indicator "sex", we can see that the percentage of female and male audiences is different, – 82,10% and 17,90%, respectively (Fig. 11). This suggests that the profile is of greater benefit to a female audience

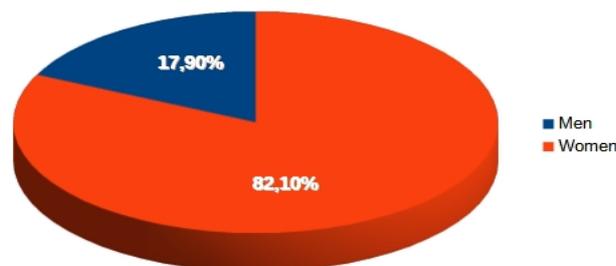


Figure11: Distribution of target audience

Let us determine the coefficient of involvement by the formula ER:

$$ER = \frac{\frac{\text{likes} + \text{comment} + \text{shares}}{\text{of wall post}}}{\text{total Fans}} * 100\%, \quad (1)$$

$$ER = \frac{\frac{66 + 3 + 4}{9 + 9 + 9}}{426} * 100\% = 1,9\%. \quad (2)$$

It is considered that for profiles with up to 1000 participants, the normal ER is 5%. From 1000 to 10000 participants – 3%, and more than 10000 – this indicator makes 1-2%.

- Less than 1% is the lowest figure;
- From 1% to 3.5% – average figure;
- From 3.5% to 6% – high figure;
- More than 6% is a very high figure.

In our case, the ER is 1,9%, given the fact that the number of members is – 426. That is, for a given number of audiences, this is the average rate of interaction. However, after examining indicators such as "comments" and "reposts", we can conclude that the audience interacts very poorly with the posts and may need to diversify the content of the major promotion.

5. Conclusion

Thus, the interest in social networks is growing, and during the pandemic, they have come into sharp focus because they became an important source of conveying the necessary information in order to meet the new information needs of the users. At this stage, it is important to improve, increase the quality and efficiency of career guidance work with the active involvement of social networks as tools to promote the majors of higher education institutions. Our study focuses on the applicants and the content of the community "Information, Library and Archival Science". The average figure has been determined by the involvement ratio, which is 1,9% with 426 group members. That is, most of the group's posts on Facebook remain with minimal user response and may need to diversify the content to promote the major. Since the major is young and the community was created in 2018, then, accordingly, the promotion is only on the rise.

The results of the study show that we need to involve users more actively. In the future, it is planned to develop a more effective strategy that will allow applicants to optimize the process of choosing a profession and further successful career growth, as the major is in demand in the job market.

6. References

- [1] A. Vitushko, The problem of using social networks in the library information production from the point of view of information security. Scientific works of the Vernadsky National Library of Ukraine 36 (2013) 181–191.
- [2] A. Yatsyshyn, Use of virtual social networks for the needs of general secondary education, Journal of Information Technologies in Education (ITE) 19 (2014) 119–126. doi:10.14308/ite000491.
- [3] O. Shcherbakov, H. Shcherbyna, Social network to support the educational process in universities. Information processing systems 8 (2012) 159–162.
- [4] S. Ivashnova, Use of social services and social networks in education. Scientific notes of the Nizhyn Gogol State University 2 (2012) 15–17.
- [5] A. Peleshchyshyn, Yu. Sierov, O. Berezko, O. Peleshchyshyn, O. Tymovchak-Maksymets, O. Markovets, Processes of management of interactive social communications in the conditions of development of information society: monograph, Lviv, Publishing House of Lviv Polytechnic National University, 2012.
- [6] Zh. Myna, A. Peleshchyshyn, Internet resources of the history of Ukraine in the global computer network. Information content. Bulletin of the National University "Lviv Polytechnic" State and Army 809 (2014) 104–109.

- [7] Zh. Myna, U.Yarka, O. Peleshyshyn, T. Bilushchak, Integration of international quality management standards into the general document management system of a higher educational institution. *Management of complex systems development* 25 (2016) 144–150.
- [8] T. Popova, Implementation of career guidance activities through the use of modern means of Internet technology. *Theoretical and methodological problems of raising children and students* 17(2) (2013) 181–190.
- [9] O. Anisimova, V. Vasylenko, S. Fedushko, Social Networks as a Tool for a Higher Education Institution Image Creation. In: *Proceedings of the 1st International Workshop on Control, Optimisation and Analytical Processing of Social Networks (COAPSN-2019)*, Lviv, Ukraine, May 16-17, 2019, CEUR Workshop Proceedings, vol. 2392, 2019, pp. 54–65. URL: <http://ceur-ws.org/Vol-2392/paper5.pdf>.
- [10] T. Bilushchak, O. Radkovets, Y. Syerov, Internet Marketing Strategy Promotion of a Book in Social Media. *International Workshop on Control, Optimisation and Analytical Processing of Social Networks*. In: *Proceedings of the 2st International Workshop on Control, Optimisation and Analytical Processing of Social Networks (COAPSN-2020)*. Lviv, Ukraine, May 21, 2020, CEUR Workshop Proceedings, vol. 2616, 2020, pp. 260-272. URL: <http://ceur-ws.org/Vol-2616/paper22.pdf>.
- [11] N. Shakhovska, O. Peleshyshyn, Zh. Myna, T. Bilushchak, Online community information model for use in marketing activities. In: *Proceedings of the 1st International Workshop on Control, Optimisation and Analytical Processing of Social Networks (COAPSN-2019)*, Lviv, Ukraine, May 16-17, 2019, CEUR Workshop Proceedings, vol. 2392, 2019, pp. 263–272. URL: <http://ceur-ws.org/Vol-2392/paper20.pdf>.
- [12] M.D. Roblyer, M. McDaniel, M. Webb, J. Herman, J. V. Witty, 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 (2010) 134–140. doi:10.1016/j.iheduc.2010.03.002.
- [13] G. Yermolaeva, The use of multimedia technologies and social networks in career guidance specialty "Information, library and archival affairs". In: *Proceedings of the Second International Scientific Conference: Information, Communication and Knowledge Management in a Globalized World*, Kyiv, 2019, pp. 118–120. URL: http://217.77.221.199/bitstream/123456789/1259/1/%D0%84%D1%80%D0%BC%D0%BE%D0%BB%D0%B0%D1%94%D0%B2%D0%B0._118-120.pdf.
- [14] Yu. Bogachkov, P. Ukhan, Organization of engagement and involvement in the learning using electronic social networks. *Information technologies and teaching aids* 57:1 (2017) 173–188. doi: 10.33407 / itlt.v57i1.1539.
- [15] S. Lytvynska, A. Kovalchuk, The use of social networks in the information activities of higher educational institutions of Ukraine (on the example of the National Aviation University). *Proceedings of the II All-Ukrainian scientific-practical conference: historical, cultural and socio-economic aspects of regional development*, Kremenchuk, 2017, pp. 142–144. URL: <http://er.nau.edu.ua/handle/NAU/37068>.
- [16] O. Salem, Social Media Marketing In Higher Education Institutions, *SEA - Practical Application of Science*, Romanian Foundation for Business Intelligence 23 (2020) 191–196.
- [17] A.Peruta, A.Shields, Marketing your university on social media: a content analysis of Facebook post types and formats. *Journal of Marketing for Higher Education* 28(3) (2018) 1–17.
- [18] L.Zhen, K. Bhaga, Y. Zhen, X. Zhang, The Effectiveness of the Flipped Classroom on Students' Learning.Achievement and Learning Motivation: A Meta-Analysis. *Educational Technology & Society* 23(1) (2020) 1–15.
- [19] Y. Sung,K. Chang, T.Liu, The Effects of integrating mobile devices with teaching and learning on students' learning performance: A Meta-analysis and research synthesis. *Computers & Education* 94 (2016) 252–275. doi:10.1016/j.compedu.2015.11.008.
- [20] H.-W. Huang, J.-T. King, C.-L Lee, The New Science of Learning: Using the Power and Potential of the Brain to Inform Digital Learning. *Educational Technology & Society* 23(4) (2020) 1–13.