

Methods and Means of Forming the Image of the Teacher of the Higher Education Institution

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Abstract

Today, the brand of a teacher or scientist is an integral part of his pedagogical and scientific activity. The teacher's personal page should complement the image of the teacher of the institution of higher education and have an appropriate appearance and content that corresponds to the teacher's corporate code. Therefore, the article analyzes the expediency of creating a positive image of a teacher of a higher education institution in the social environment of the Internet. The article presents tools that should be used to create a positive image of a teacher at a higher education institution. The process of forming and the context diagram of the informational image of the teacher of higher educational institutions are presented. The stages of formation of the informational image of the teacher of higher educational institutions are determined.

Keywords

Social network, teacher, scientometric databases, image, Higher Education Institution, social environments of the Internet

1. Introduction

Today, creating a positive image of a modern teacher at a higher education institution is an urgent and necessary task. The components of a teacher's image include many characteristics, in particular: professional qualities, pedagogical skills, personal qualities, appearance, etc. However, at the time of global informatization and digitalization, the formation of the teacher's image in the social environments of the Internet is an urgent task. Taking into account the popularity of social media on the Internet, the formation of an informational image of a teacher is possible by creating a personal page in social networks. The teacher's personal page should complement the image of the teacher of the institution of higher education and have the appropriate appearance and content. Taking into account the number and types of social networks that are suitable for creating a teacher's brand, it is necessary to form a complete informational image of the teacher in the social environments of the Internet. It is worth noting that often the teacher is also a scientist, so it is necessary to pay attention to the quality content of scientific social networks.

2. Related Works

Institutions of higher education and the scientific sphere are constantly developing and modernizing, along with these spheres, scientists and teachers are also developing. The challenges of modern society make corrections in all spheres of activity, including teaching. Therefore, the image of a modern teacher and its components is permanently studied.

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In [1], the author presents the influence of the teacher's image on the student, through the study of psychological factors, professional identification and identity, and the teacher's professional attributes.

The authors in [2] present the conditions and stages of image formation of a modern teacher of a higher education institution. The functions of the teacher's pedagogical image are determined and the image management system of a modern teacher of a higher education institution is presented. Also, the authors proposed measures for acquiring practical skills for creating an image.

Pedagogical competence affects the image of a modern teacher, his scientific knowledge, abilities and skills of pedagogical activity. In [3], the authors study systems for measuring the level of pedagogical competence of teachers of higher education institutions. Determining the level is necessary for its competitiveness in higher education, pedagogical mobility and readiness for professional growth.

The authors in [4] conducted a study, by surveying students, on the essence of forming the image of a modern teacher of a higher education institution and suggested ways to improve the formation of a teacher's image. The authors also conduct research [5] on determining the essence of the formation of the professional image of a modern teacher in institutions of higher education.

In [6], the author investigated the views of students and teachers regarding the formation of a positive image of a modern teacher. The study paid attention to the teacher's appearance, personal qualities, and teaching professionalism. Today, social networks are also widely used in forming the informational image of a higher education institution [7; 8; 9]. And the generators of the information image of higher education institutions are the official communities of the departments of the institution of higher education in the social environments of the Internet.

The article [10] analyzes the main documents that regulate and define the activity of a teacher of a higher education institution, highlighting the results of the analysis of the development of the profile of teachers of higher education institutions based on the competency approach in different countries of the world. The authors elaborated the functions of the teacher's activity in view of the strategic development of society. From the research, a conclusion was made regarding the professional competence of a modern teacher, which includes a personality based on knowledge, abilities and skills.

Scientists in [11] conducted a study, the results of which show that social media is a professional development tool for teachers of higher education institutions and can increase professional competence, which can contribute to the professional development of teachers. The results of this study show that social media is a professional development tool for teachers and can increase professional competence, which can contribute to teachers' professional development. Scientists note that the social environment of the Internet helps the teacher of a higher education institution to realize himself in the spheres of teaching, research and public work.

In [12], the author considers the use of commercial social networks and media in higher education institutions. Scientists have investigated that the pedagogical possibilities of social media are still only partially realized, despite such possibilities as: combining information and educational resources, hybridization of experience, expansion of the learning context, branding of the teacher.

3. The purpose and objectives of the study

Highlighting previously unsolved parts of the general problem to which this article is devoted: analyzing previous studies, scientists do not pay enough attention to the formation of an informational image of a teacher, as a component of the image of a modern teacher of a higher education institution.

The purpose of the article is to research the way of forming the image of a modern teacher of a higher education institution in the social environment of the Internet. In order to achieve the goal, an analysis of popular social networks was carried out and a context diagram of the creation of the teacher's informational image was presented.

4. Means for the formation of the teacher's informational image

Social environments of the Internet can include sites, social networks, and virtual communities. Today, social networks are the best platform for forming an informational image and personal brand on the Internet. According to statistics of visitors to social networks on the Internet, the portal "StatCounter" [13], the most popular social network is Facebook. Rating data are presented in Fig. 1.

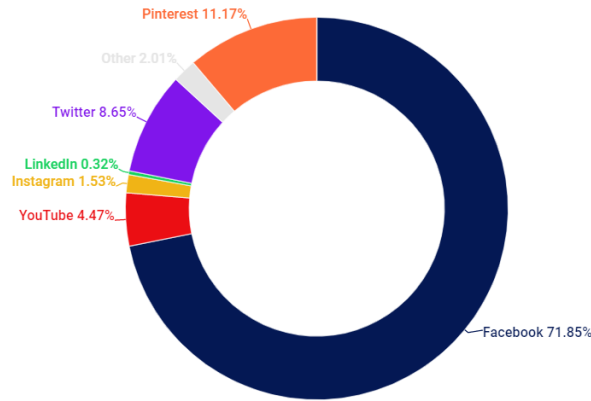


Figure 1: Statistics of social networks (October 2022 - June 2023)

Platforms that are sources and generators of the information image of a teacher at a higher education institution can be divided into the following categories (Fig. 2.):

- Social networks. Most often, a personal profile in social networks is used to interact with students, or with future applicants. Social networks are also used to build a teacher's own brand. They use social networks, such as: ResearchGate, LinkedIn, in the professional activity of a teacher to form a scientific resume, search for a job, partners for cooperation, and present professional achievements.
- Scientometric databases. Scientometric databases are used for professional scientific and teaching activities. It is not only an abstract and bibliographic database, but also a tool for tracking citations and publication activity of a teacher of a higher education institution. With the help of scientometric databases, it is possible to find colleagues from the same subject area for cooperation.
- Sites. Private websites and websites of higher education institutions are used for personal branding and for scientific activity, for searching for projects and partners.
- Other. Another should include mentions of teachers of higher education institutions in mass media. Also, here you can include reviews about teachers of higher education institutions on educational portals.

The statistics of the "StatCounter" portal are general and not specialized for a specific subject area. However, these statistics let us understand which social networks should be used for teacher branding in the public space. Of course, these statistics and processed other social networks are summarized from the point of view of the work of a teacher of a higher education institution in Ukraine, actually from general experience and observations. Each country or educational institution determines for itself which platforms are useful for them to build an informational image of a teacher of a higher education institution in the social environments of the Internet.

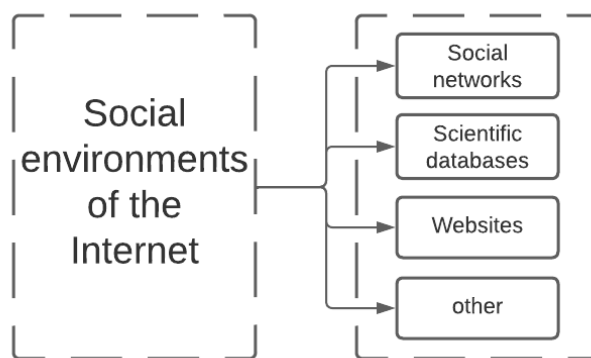


Figure 2: Scheme of teacher's information activities

1. Social networks.

- **ResearchGate.** The scientific social network ResearchGate was created for the purpose of cooperation between scientists from different parts of the world. The social network provides an opportunity to use the database of publications of registered users, exchange messages and files, search by CV, create groups and projects. Also, with the help of ResearchGate, teachers can create scientific blogs within the social network [14, 15]. With the help of the ResearchGate social network, a teacher can make his works freely available, find colleagues based on interests, and search for scientific publications.

- **LinkedIn.** A social network for finding business contacts. A personal page in the LinkedIn social network contains information about all personal and scientific achievements, it is possible to add bibliographic descriptions of scientific works, information about business trips, conferences and existing certificates. Based on the completed personal page, it is possible to create a resume and search for a job. Users of the social network can write a review or recommend you on your page. It is also possible to create interest groups and publish job vacancies. With the help of the LinkedIn social network, a teacher can expand his circle of colleagues based on common interests around the world [16].

- **Facebook.** A social network on the Internet, which was created for students of American universities. The user's personal profile in the social network consists of personal information, photos, posts, a list of interests, and access to interest groups. One of the features of the Facebook social network is the profile privacy settings. The social network allows the teacher to talk about himself, about his personal brand, to more people in an informal setting [17].

- **Instagram.** A social network on the Internet, which was created to quickly share photos in the form of a mobile application. However, now the functionality of this social network is not inferior to other similar networks. The Instagram social network is focused on photo and video content. For teachers, short video content is an opportunity to talk about their achievements and share knowledge from a certain subject area [18].

2. Scientometric databases

- **Scopus.** This is an abstract and bibliographic database, created for the purpose of tracking scientific works and their citations. Registration in the scientometric database Scopus is available only to users with two or more publications in certain publications that are indexed by this database. If the author has only one publication, his profile will be hidden. The presence of a teacher of a higher education institution's profile in the Scopus scientometric database is important for conducting evaluation studies at various levels.

- **Web of Science.** A platform that hosts databases of scientific articles, patents and publications. Similarly to the scientometric database Scopus [19], it is only available to users with two or more publications in certain publications that are indexed by this database.

- **Google Scholar.** A search engine that indexes the full text of scientific publications of all formats and subject areas. In terms of tools, it is similar to the Scopus and Web of Science scientometric databases [20]. However, it is considered the world's largest scientific search engine and indexes all journals that are presented on the Internet.

3. Sites

- **Wiki-portal.** The website is built on the basis of wikitext and allows users to independently change information on the portal pages. A special feature of the wiki portal is the possibility of multiple editing of the text, hyperlinks to other pages of the portal, history of text editing. The most popular wiki portal is the free encyclopedia "Wikipedia". However, today most institutions of higher education have their official wiki-portals, on which all teachers of higher education institutions can post information about themselves according to the template [21; 22]. The wiki portals provide up-to-date information about the academic and professional activities of the teacher. With the help of a wiki portal, a teacher of a higher education institution can provide up-to-date information about himself regarding scientific and professional activities.

- **Website of the institution of higher education.** Each institution of higher education has its own representation in the social environment of the Internet in the form of a site developed according to the requirements. The official website contains all the information about the unit and the teachers who work in the unit. For example, on the official website of the Lviv Polytechnic National

University there is information about the list of teachers working in the unit and a link to their page on the higher education institution's Wikipedia.

- **Website of the department.** For additional branding of a unit of a higher education institution, separate sites of the units are created. Often, in addition to general information about the unit and its functions, the website also contains information about the unit's employees. For example, the website of the department highlights information about the teacher's scientific and pedagogical activities, a list of his works and achievements.

- **The teacher's personal website.** A teacher of a higher education institution can create his personal site on the domain of the higher education institution (or department) or on a separate domain. Information about a specific teacher will be posted on the personal website. For example: his short biography, list of publications, list of scientific achievements, information about internships and grants.

4. Other

- **Mentions in mass media.** The mention of a teacher of a higher education institution in mass media has a positive effect on the informational image and branding. It can be mentioned as a scientist or as a guest analyst to comment on a certain situation.

5. Processes of formation of the informational image of the teacher of higher educational institutions

The information image of a teacher of a higher education institution (InfImage) is publicly available information about a teacher of a higher education institution in social media on the Internet. This is the information created directly by the official sources of the higher education institution or the teacher himself, as well as the information created by users in social media environments (posts, comments), guest books, media comments, etc.

We formalize the above concepts of the stages of information image formation. We will describe the informational image of a teacher at a higher education institution as a set of separate components:

$$InfImage = \{InfImage_i\}_{i=1}^{M^{(InfImage)}}, \quad (1)$$

where $InfImage_i$ – i-th component of the informational image of the teacher of higher education institutions; $M^{(InfImage)}$ – number of components.

So, the components of a higher education teacher can be: posts on social networks, comments on them mentioning the teacher, comments on a publication about a teacher of higher education in the media, official pages of the teacher in social networks, official information about the teacher on resources of higher education, etc.

The information source of a teacher of a higher education institution (Resource) is the objects and concepts that form the informational image of the teacher. The information source can be formed directly in social environments of the Internet, or outside of them (for example: preparation for an interview in the mass media, preparation of a teacher's report, etc.

$$Resource = \{Resource_i\}_{i=1}^{M^{(Resource)}}, \quad (2)$$

where $Resource_i$ – i-th the information source in the social environments of the Internet; $M^{(Resource)}$ – number of sources.

The generator of the informational image of the teacher of secondary education (Generator) is the users and the platform where information about the teacher of secondary education is generated. For example, thematic virtual communities in social networks, thematic sites, thematic forums or blogs, etc., can be generators of the informational image of a teacher of vocational education and training. Actually, the information image generator can use several information sources.

Similarly, we will describe the set of generators of the information image of the teacher of higher educational institutions and information sources of social media on the Internet:

$$Generator = \{Generator_i\}_{i=1}^{M^{(Generator)}}, \quad (3)$$

where $Generator_i$ – i-th generator; $M^{(Generator)}$ – the number of generators.

6. Stages of formation of the teacher's informational image in the social environments of the Internet

The formation of the informational image of a teacher of a higher education institution [5; 23] in the social environment of the Internet has its own life cycle, which is presented to us in Fig. 3 and consists of five stages.

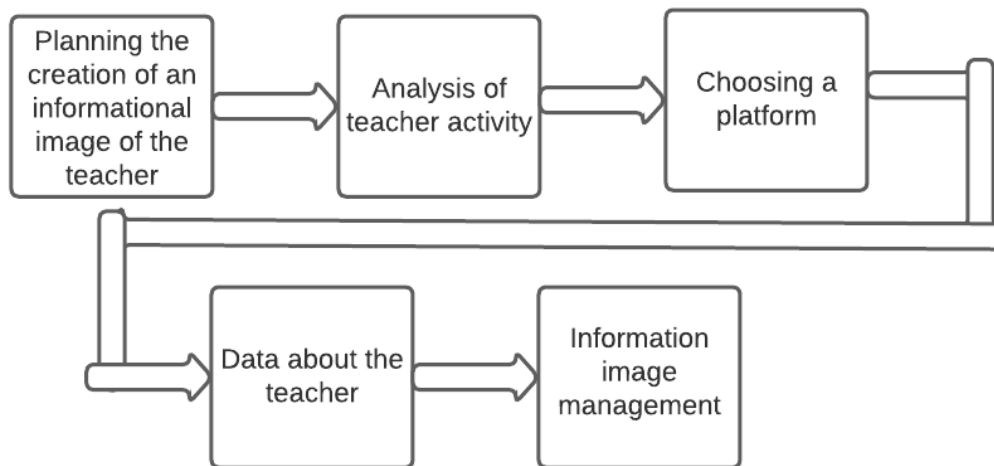


Figure 3: Stages of formation of the teacher's informational image in the social environments of the Internet

Stage 1 – Planning the creation of an informational image of the teacher. The teacher's decision to create his/her informational image in the social media of the Internet, as a component of forming a positive image of the teacher of the institution of higher education. At this stage, the teacher plans to create his personal brand as both a scientist and a teacher, to declare himself and his achievements in the information space. It is worth noting that speaking about the personal brand of a teacher, it should be a personal initiative of the teacher. Institutions of higher education encourage the formation of a scientific brand of a teacher by writing publications that are included in scientometric databases, thereby creating a profile for them there with affiliation to an institution of higher education and tracking their publication activity and citations.

Stage 2 – Analysis of the teacher's activity. It is necessary to carry out an analysis of the reference pages of teachers of higher education institutions. Analysis of one's activity and information that must be disclosed about one's activity. Determine the purpose and goals of forming an information image of your image. You need to analyze what is relevant in the social networks of the Internet in your subject area, and understand what exactly you need to develop. Today, more and more people want to see the publishing and social activity of teachers, openness to students and the creation of scientific and educational projects.

Stage 3 – Choosing a platform. The choice of a social network in which the teacher of higher education will form his informational image. Familiarization with the sections that need to be filled with information. There can be several platforms for highlighting scientific activities (for example, ResearchGate) and personal achievements (for example, LinkedIn, Facebook).

Stage 4 – Data about the teacher. Forming a package of information that must be highlighted in social networks: personal information, scientific achievements, topics for posts.

Stage 5 – Management of the teacher's informational image. Management of your pages in social networks, permanent updating of information, publication of posts and interaction with other users of social networks. A content plan is necessary for high-quality information presentation of a teacher of a higher education institution in the social environment of the Internet. A publication activity plan is also needed to increase citations and activity in scientometric databases. It is necessary to update the information about the teacher on the websites of units and institutions of higher education.

7. Context diagram of the formation of the teacher's informational image

A context diagram is the main tool for the structural analysis of a certain activity, and also graphically illustrates the complex processes of the system and the flow of data between them. The context diagram of the formation of an informational image of a teacher of a higher education institution is presented in Fig. 4, 5.

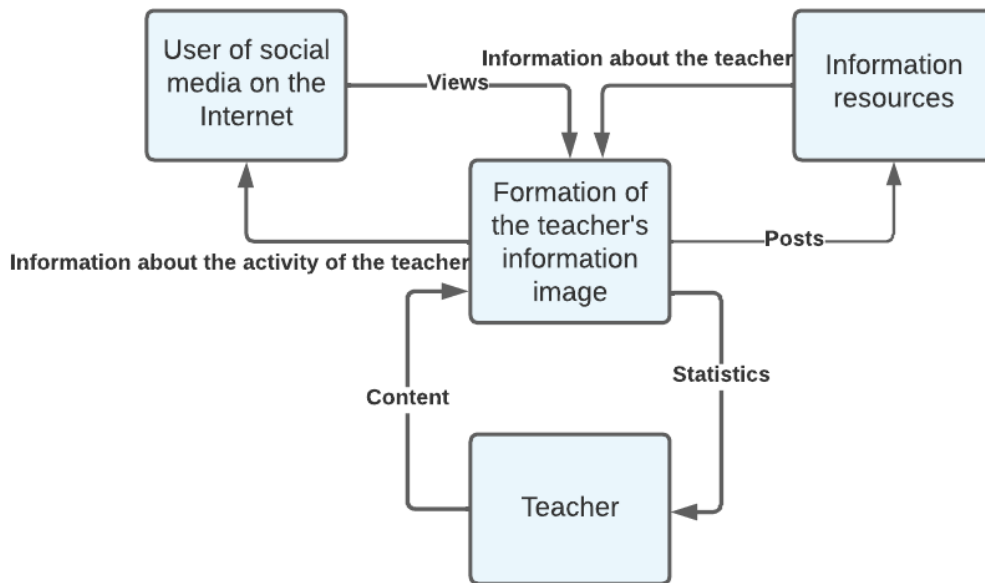


Figure 4: Context diagram of the teacher's informational image

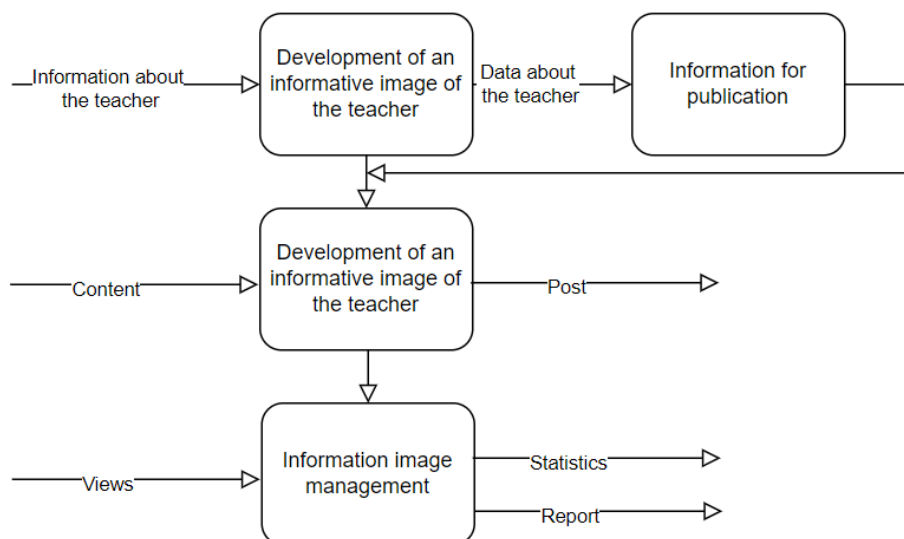


Figure 5: Detailing context diagram of the teacher's informational image

The external entity "User of social media of the Internet" is connected to the main process "Formation of the information image of the teacher" using the data flow "Views" and "Information about the activity of the teacher". The user will receive information, which is published on the Internet, about the teacher of the higher education institution. The external entity "Teacher" is connected to the

main process using the data flow "Information content" and "Engagement statistics". In order to form a teacher's informational image, it is necessary to permanently update information about oneself and one's achievements. Also, the teacher can view statistics on visits to his page and comments on his posts. The Information Resources external entity is connected to the main process via the Teacher Information and Posts data flows. The information resources include posts by the teacher and about the teacher, which forms the informational image of the activity of the teacher of the higher education institution.

8. The effectiveness of the informational image of a teacher of a higher education institution

The characteristics of the informational image of a teacher of a higher education institution can be described as a tuple:

$$InfIm(T_i) = \langle SocNW(T_i), SciBD(T_i), Site(T_i), Other(T_i) \rangle, \quad (4)$$

where $SocNW(T_i)$ – social networks, $SciBD(T_i)$ – scientometric databases, $Site(T_i)$ – sites, $Other(T_i)$ – other.

$$SocNW(T) = \{SocNW_i(T)\}_{i=1..N(SocNW)}, \quad (5)$$

where $SocNW_i$ – i-th social network where there is a profile of a teacher of a higher education institution, $N(SocNW)$ – the number of profiles in social networks.

$$SciBD(T) = \{SciBD_i(T)\}_{i=1..N(SciBD)}, \quad (6)$$

where $SciBD_i$ – i-th scientometric database, which contains the profile of a teacher of a higher education institution, $N(SciBD)$ – number of profiles in scientometric databases.

$$Site(T) = \{Site_i(T)\}_{i=1..N(Site)}, \quad (7)$$

where $Site_i$ – i-th site, where there is information about the teacher of the institution of higher education, $N(Site)$ – number of sites with information.

$$Other(T) = \{Other_i(T)\}_{i=1..N(Other)}, \quad (8)$$

where $Other_i$ – i-th resource, where there is information about the teacher of the institution of higher education, $N(Other)$ – number of resources with information.

9. Results

Approbation of research on the use of methods and means of forming the informational image of a teacher of a higher education institution was applied at the educational and scientific team of the Department of Social Communications and Information Activities of the National University "Lviv Polytechnic" [24; 25].

Sources of information collection about teachers of the department:

- social networks: Facebook, Instagram, LinkedIn, RecerchGate;
- scientometric databases: Scopus, Web of Science, Google Scholar;
- official websites of divisions of higher education institutions: Wiki-portal, Website of the institution of higher education, Website of the division, The teacher's personal website;
- information in mass media that is freely available.

Several platforms and methods of collecting information from various sources were used to collect information about the department's teachers. Because it takes longer to do it automatically and there is a possibility of inaccurate information. When collecting information on my own, I paid attention to the language and peculiarities of writing teachers' surnames and initials, used access to university databases, where general information about the teacher is collected.

For example, the teacher "Solomia Fedushko" can be written in several ways in English. The name "Solomia" can be in the following forms and abbreviations: "Solomia", "Solomiia", "Solja", "Solya", "Соля", "Соломія". Either the user can be registered under a pseudonym, or have namesakes, and then you need to identify the teacher's account by photo and personal information.

For example, to collect information about the presence of teachers' accounts in scientific and metric databases, the "ScienceLP" information system of the Lviv Polytechnic National University was used (Fig. 6).

Дані особи

Контакти			Трач Ольга Романівна Olha.R.Trach@lpnu.ua Рейтинг R1
Тип контакту	Значення	Посилання	
Робоча е-пошта	Olha.R.Trach@lpnu.ua	Е-пошта @LPNU.UA	
Scopus AuthorID НУ "Львівська політехніка"	57189328242	Профіль scopusID НУЛП	
Web of Science ResearcherID НУ "Львівська політехніка"	Q-8721-2017	Профіль web of Science НУЛП	
Логін баз даних Університет	Trach_O_R		
UserID Google Scholar	kHLx-D4AAAAJ	Профіль userID Google Scholar	

Figure 6: Databases "SciencLP"

As of June 2023, the staff of the department includes 26 teachers with various positions, scientific degrees and titles. The teachers of the department created and managed their profiles in the social environments of the Internet, following the methods of forming the informational image of the teacher of higher educational institutions [26].

Table 1

The presence of characteristics of the informational image of the teacher

	Social networks				Scientometric databases			Sites			Other	
	Facebook	Instagram	LinkedIn	ResearchGate	Scopus	Web of Science	Google Scholar	Wiki-portal	Website of the institution of	Website of the division	The teacher's personal	Mentions in mass media
Teacher 1	+	+	+	+	+	+	+	+	+	-	-	-
Teacher 2	+	+	+	+	+	+	+	+	+	-	-	+
Teacher 3	+	+	+	+	+	+	+	+	+	-	-	-
Teacher 4	+	+	+	+	+	+	+	+	+	-	-	-
Teacher 5	+	+	+	+	+	+	+	+	+	-	-	-
Teacher 6	+	+	+	+	+	+	+	+	+	-	+	-
Teacher 7	+	+	+	+	+	+	+	+	+	-	+	+
Teacher 8	+	-	-	+	+	+	+	+	+	-	-	-
Teacher 9	+	-	-	+	+	+	+	+	+	-	-	+
Teacher 10	+	-	+	+	+	+	+	+	+	-	-	-
Teacher 11	+	-	-	-	-	-	+	+	+	-	-	-
Teacher 12	+	+	-	+	+	+	+	+	+	-	-	-
Teacher 13	+	+	+	+	+	+	+	+	+	-	-	+
Teacher 14	+	+	-	-	-	-	+	+	+	-	-	-
Teacher 15	+	+	-	+	+	+	+	+	+	-	-	-
Teacher 16	+	+	-	+	+	+	+	+	+	-	-	-
Teacher 17	+	+	+	+	+	-	+	+	+	-	-	-
Teacher 18	+	+	-	+	+	+	+	+	+	-	-	-
Teacher 19	+	+	+	-	-	-	+	+	+	-	-	-
Teacher 20	+	+	+	+	+	+	+	+	+	-	-	-
Teacher 21	+	+	+	+	+	+	+	+	+	-	-	-
Teacher 22	+	-	+	-	+	-	+	+	+	-	-	-
Teacher 23	+	+	+	+	+	+	+	+	+	-	-	-
Teacher 24	+	+	+	+	+	+	+	+	+	-	-	+
Teacher 25	+	+	+	+	+	+	+	+	+	-	-	-
Teacher 26	+	+	+	+	+	+	+	+	+	-	-	-

Using efficiency formulas regarding the characteristics of each of the teachers, the graph shown in Fig. 7.

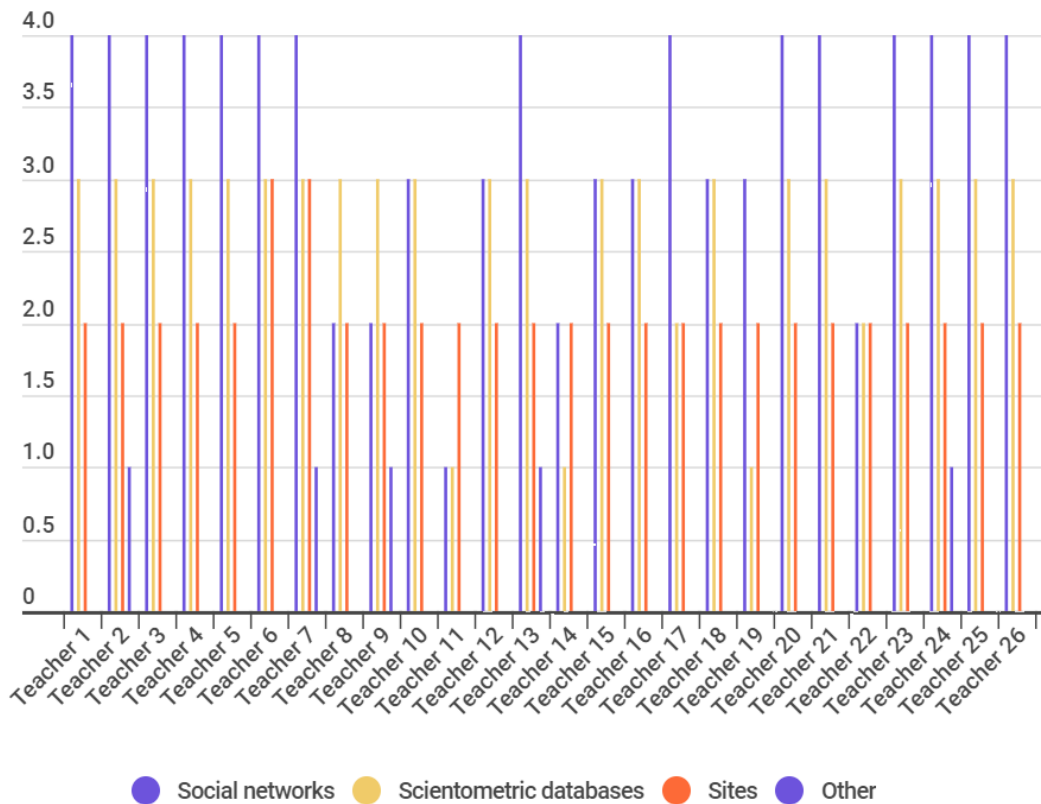


Figure 7: Characteristics of teachers of the department

10. Conclusion

The formation of an informational image of a teacher of a higher education institution as a component of the image has many advantages, namely: the possibility of finding partners for cooperation, attracting applicants to your institution of higher education, providing interesting and useful information about your field of activity, etc. However, it is necessary to analyze the information, check for literacy, authenticity and quality before it is published in the social environments of the Internet to prevent the risks of bullying and defamation. The brand of a teacher or scientist is an integral part of his pedagogical and scientific activity. The article analyzes the expediency of creating a positive image of a teacher of a higher education institution in the social environment of the Internet. Means that should be used to create a positive image of a teacher at a higher education institution are presented. The process of forming and the context diagram of the informational image of the teacher of higher educational institutions are presented. The stages of formation of the informational image of the teacher of higher educational institutions are determined.

When forming an informational image of a teacher of vocational education and training, it is important to follow the proposed means and stages of formation of IO of a teacher of vocational education and training. Taking into account the development of social environments of the Internet and arrays of information content, teachers' pages need constant monitoring and updating. The results, which were tested on the teachers of the department, also showed that the characteristics of the informational image of each teacher of the department are important. The more positive informational images of teachers, the better the overall indicator of the department, which can also be used in advertising activities of the department or educational program.

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