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Transformation of students' professional value orientations in the context of Internet socialisation and the unstable future world of professions

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Importance. The active digitalisation of the economy leads to the transformation of students' professional and value orientations. The process is exacerbated with the development of new forms of their online socialisation and requires pedagogical management. In order to build adequate pedagogical technologies it is necessary to identify the most sensitive components and criteria for the transformation of students' professional value orientations. Novelty lies in the fact that (using computer science students as an example) for the first time changing professional needs are presented, which are reflected in the results of complex analysis of communication on popular forums in IT sphere; on web-sites of professional communication and large IT-companies; communication on telegram channels of employees of world IT-industry leaders. It has been proved that the identified needs contribute to the formation of professional interest and involvement in professionally oriented practice. As evidence, the results of a social survey among IT students on the use of their professional communication on the Internet for real work are presented. Quantitative methods of collecting information were used to collect the data required for the study: analysis of documents, surveys, questionnaires. For the first time, the logic of forming emerging professional value orientations in the context of Internet socialisation and the unsustainability of the future world of professions is presented. Based on the identified value orientations, relevant criteria for assessing the transformation of professional and value orientations under conditions of Internet socialisation are substantiated. The assumed most transformation-sensitive elements of value orientations in this context are identified.
Research Methods. To achieve the research goals, various methods were used, including the method of analyzing information sources, the method of questioning through the digital resource Google Forms. The experimental base for the pilot study was 1st, 2nd, 3rd and 4th year students from universities in Tambov and Moscow, numbering 507 people aged 17 to 23 years.
Results and Discussion. As a result of the study, criteria for assessing the transformation of the system of professional value orientations in the conditions of Internet socialization and instability of professions were identified and justified: the formation of values – relationships with the pro-

fessional Internet community; formation of values – knowledge of digital technologies of professional activity and knowledge of the functionality of the Internet environment for solving professional problems; formation of values – goals of achieving a high level of fulfillment of professional needs in the Internet environment and confidence in self-realization in the future world of professions; the formation of values – the result of Internet socialization in a professional environment, satisfaction in achieving one's professional needs; formation of value – the quality of rapid professional self-adaptation in the changing world of professions using the functionality of the Internet environment; formation of values – the ability to use Internet technologies and realize oneself in the profession.

Conclusion. Based on the analysis, it was revealed that the most sensitive components of the transformation of value orientations may be values – relationships with the professional Internet community, as well as values – qualities characterized by rapid professional adaptation and self-adaptation in the changing world of professions using the functionality of the Internet environment.

Keywords: transformation of professional value orientations, Internet socialization of students, instability of the future world of professions

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Трансформация профессионально-ценностных ориентаций студентов в условиях интернет-социализации и неустойчивости будущего мира профессий

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Актуальность. Активная цифровизация экономики приводит к трансформации профессионально-ценностных ориентаций студентов. Процесс обостряется с развитием новых форм их интернет-социализации и требует педагогического управления. С целью построения аде-

кватных педагогических технологий необходимо выявить наиболее чувствительные компоненты и критерии трансформации профессионально-ценностных ориентаций студентов. Новизна исследования заключена в том, что (на примере студентов-информатиков) впервые представлены изменяющиеся профессиональные потребности, отраженные в результатах комплексного анализа общения на популярных форумах в сфере IT; на сайтах профессионального общения и крупных IT-компаний; общения на телеграм-каналах сотрудников мировых лидеров IT-индустрии. Обосновано, что выявленные потребности способствуют формированию профессионального интереса и включенности в профессионально-ориентированную практику. В качестве доказательства приведены результаты социального опроса студентов-информатиков по использованию их профессионального общения в Интернете для реальной работы. Для сбора данных, необходимых для проведения исследования, использованы количественные методы сбора информации: анализ документов, опрос, анкетирование. Впервые представлена логика формирования появляющихся профессионально-ценностных ориентаций в контексте интернет-социализации и неустойчивости будущего мира профессий. На основе выявленных ценностных ориентаций обоснованы соответствующие критерии оценки трансформации профессионально-ценностных ориентаций в условиях интернет-социализации. Обозначены предполагаемые наиболее чувствительные к трансформации элементы ценностных ориентаций в указанном контексте.

Методы исследования. Для достижения поставленных целей исследования применялись различные методы, включая метод анализа информационных источников, метод анкетирования посредством цифрового ресурса Google Forms. В качестве экспериментальной базы для проведения пилотажного исследования выступили студенты 1–4 курсов вузов Тамбова и Москвы в количестве 507 человек в возрасте от 17 до 23 лет.

Результаты исследования. Выявлены и обоснованы критерии оценки трансформации системы профессионально-ценностных ориентаций в условиях интернет-социализации и неустойчивости профессий: сформированность ценностей – отношений с профессиональным интернет-сообществом; сформированность ценностей – знаний цифровых технологий профессиональной деятельности и знание функциональных возможностей интернет-среды для решения профессиональных задач; сформированность ценностей – целей достижения высокого уровня реализации профессиональных потребностей в интернет-среде и уверенности в самореализации в будущем мире профессий; сформированность ценности – результата интернет-социализации в профессиональной среде, удовлетворенности в достижении своих профессиональных потребностей; сформированность ценности – качества быстрой профессиональной самоадаптации в изменяющемся мире профессий с использованием функциональных возможностей интернет-среды; сформированность ценности – умения применять интернет-технологии и реализовать себя в профессии.

Выводы. На основе проведенного анализа выявлено, что наиболее чувствительными компонентами трансформации ценностных ориентаций могут быть ценности – отношения с профессиональным интернет-сообществом, а также ценности – качества, характеризующиеся быстрой профессиональной адаптации и самоадаптации в изменяющемся мире профессий с использованием функциональных возможностей интернет-среды.

Ключевые слова: трансформация профессионально-ценностных ориентаций, интернет-социализация студенческой молодежи, неустойчивость будущего мира профессий

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IMPORTANCE

With the high rate of change in digital technologies of professional activities, and the integration of professions with new types of information and robotic technologies, instability of professions is being created. Along with the widespread introduction of digital technologies and the Internet socialisation of young people, the system of professional and value orientations is being transformed.

The need to find pedagogical technologies for managing the process of professionally-oriented training of students under conditions of Internet socialisation is actualised. For this purpose, hypothetically, it is necessary to clarify the components of the system of students' professional value orientations, to identify the most sensitive of them to transformation, and to determine the criteria and indicators of professional value orientations transformation under conditions of Internet socialisation.

The analysis conducted on the state of the problem has led to a number of conclusions. Currently, the development of a diagnostic apparatus of professional value orientations has received specific results for individual categories of specialists in the works of A.A. Pecherskaya [1]. The monograph by N.A. Samoilik [2] (from the perspective of psychology) presents the developed technique of diagnostics of a person's professional and value orientations, substantiates its psychometric indicators and provides results on a sufficiently large number of respondents from different labour areas. But these works do not take into account the emerging new professional and value orientations in the context of developing new forms of Internet socialisation. The methodologies allowing to study the axiological component of personality (S.S. Bubnova [3], G.E. Leevik [4], A.V. Kaptsov, L.V. Karpushina [5], E.V. Pakhomova [6], I.G. Senin [7] and others) also require rethinking from the position of clarifying the structure of professional and value orientations, criteria and indicators of their formation in connection with the development of new forms of Internet socialisation in professional activity and the dynamics of professions in the context of information society development.

In a fragmented way, researchers from various scientific fields have already stated the changing value orientations of young people in the age of the Internet [8], as well as moral-spiritual and social values [9]. The results of the surveys reveal certain aspects of the problem and also indicate a change in values in an intercultural context [10]. Scholars in the field of economics also pay attention to the system of value orientations and state that it is important to reconsider values and satisfactions in order to attract new consumers [11]. Moreover, at the junction of different directions in the world scientific community the specifics of young people's online behaviour are being studied [12], the influence of Internet on users' social needs is being analysed, emergence of new forms of socialisation among students in the Internet space is being considered [13].

Scientists-philosophers specialising in the field of information society development and informatics specialists state the facts of new specific values emergence in information society, among which one can mention: value of man-made information technologies themselves; value of saving social time by means of Internet communication development; information accessibility; priority of information over other resources; formation of information unity of the whole civilisation. All the specific values of the information age also influence the transformation of young people's professional value orientations.

Previously, in this context, the authors of this study have carried out work that has made it possible to consider the cause-and-effect relationship of changes in the professional and value orientations of young people in the context of Internet socialisation, to clarify the formation of the "professional and value orientations" concept in the context of the ongoing socio-economic changes [14]. Furthermore, surveys in 2010, 2016 and 2020 show that networking technology has by now become an integral component of the working life of a large proportion of the population. The vector of developing an

attitude towards oneself as a specialist – which in today's environment should be constantly developing – is clearly visible to a large proportion of professionals. First and foremost, those with higher education and students who use the Internet to improve their professional competences, both through online educational courses and by searching for professionally relevant information themselves.

It has been substantiated that nowadays Internet socialisation has a significant impact on the transformation of the system of professional and value orientations among young people. At the same time, the surveys have shown that despite the intensification of communication among young people online, they have not formed priorities and understanding of the problems of developing the professional sphere, and have little idea of the industry's development leaders. Although young people are generally informed about online risks – they have no idea how to minimise them [15]. The young students socialising on the internet have, for the most part, a superficial understanding of the professions, the leaders of the industry in which they are studying in university. The need for pedagogical models that harmonise the professional and value orientations of student youth has become apparent. This requires identifying the components and criteria of emerging professional value orientations.

RESEARCH METHODS

In order to collect data, structure it and justify required for the study, quantitative data collection methods were used: analysis of documents, surveys, questionnaires. Criteria for selecting information sources. Various sources of information were used to analyse the processes under study. In order to select sources, the criteria were defined enabling the sorting of information sources according to their relevance, objectivity and significance for the study, which contributes to higher quality of the analytical procedures. Since the topic is interdisciplinary and dynamic in terms of the emergence of new information due to the problem of Internet socialisation and the unsustainability of future professional world, an analysis of sources in the international databases Scopus and WoS was carried out.

A working definition is the following: value orientations – "a system of ideas reflected in a person's consciousness, characterising the attitude towards professional activity as psychologically and socially significant" [16]. In the structure of professional value orientations, cognitive, emotional and behavioural components are distinguished.

The experimental base for conducting the pilot study consisted of 1st, 2nd, 3rd and 4th year university students from Tambov and Moscow, comprising 507 people aged 17 to 23. A large proportion of them are students specialising in information technology and have professional experience. Only significant results were used for conclusions.

A theoretical construct of personal value orientations in the context of Internet socialisation and profession volatility was developed (Table 1).

RESULTS AND DISCUSSION

The logic for obtaining the desired results is consistent with the diagram in Figure 1. An overview of the impact of the Internet environment on transforming professional value orientations is provided below. First of all, it is important to understand what new elements are emerging in the structure of the professional value orientations system. Compared to the previous results, this will enable the identification of the most sensitive components of professional value orientations in the context of developing new forms of Internet socialisation.

It is known that the presence of a need ensures the formation of interest, and that awareness of the need takes place. The individual then evaluates social phenomena on the basis of the social experience gained in relation to certain social phenomena. In this way, a value orientation is formed, as an individual's willingness to act in accordance with this assessment.

It is important to note that nowadays the virtual Internet environment is becoming a real sphere of professional activity, a part of life, changing – style, lifestyle, habits, range of interests and communication. The Internet is not only capable of fulfilling the task of socialisation. According to S.G. Nosovets, new media – social networks (VKontakte, Odnoklassniki etc.), blogging platforms (LiveJournal, Blogger etc.), microblogs (Twitter, Tumblr), Internet media and search engines (Google, Yandex, Yahoo! etc.) present different attitudes, norms and values, ultimately influencing human needs, the system of human relations [16]. On the Internet, communication can take on a delayed, synchronous, or online nature. Today, the discussion takes place in a polylogue mode with numerous participants, and it is possible to run polls, votes, ratings and many other services.

Furthermore, the government's emphasis on the "digital transformation" of the economy and education also contributes to the reinvigoration of changing value orientations.

In order to adequately represent the emergence of real professional value interests in the Internet environment, an analysis was also carried out on the communication of computer scientists, as the most "advanced" category in the field of the Internet environment (for the first time for this category). The channels, types and occasions for the IT professional community to communicate with students in the online environment are systematically examined.

Table 1

Theoretical construct of personal value orientations in the context of Internet socialisation and the unstable future world of the profession

Таблица 1

Теоретический концепция ценностных ориентаций личности в условиях интернет-социализации и неустойчивого будущего мира профессий

Component of professional value orientations	The content of a new component in the context of Internet socialisation and unsustainable professions	Professional values in the context of Internet socialisation and unsustainable professions
Cognitive	Individuals' perceptions about the significance of their professional Internet environment (the semantic component of the profession in the context of Internet socialisation and the unstable world of professions)	Values – relationships (with the professional online community). Values – knowledge (of digital technologies for professional activities and knowledge of the functionality of the Internet environment for solving professional tasks)
Emotional	Emotional experiences indicating the extent to which a person is satisfied with their needs in the professional Internet environment	Values – goals (striving to achieve a high level of fulfilment of professional needs in the Internet environment and the certainty of self-fulfilment in the future world of professions). Values – result (online socialisation in the professional environment, satisfaction in achieving one's professional needs)
Behavioral	Aiming to be realised in the professional Internet environment	Values – qualities (rapid professional adaptation and self-adaptation in a changing world of professions using the functional possibilities of the Internet environment). Values – skills (applying Internet technologies and realising oneself in the profession)

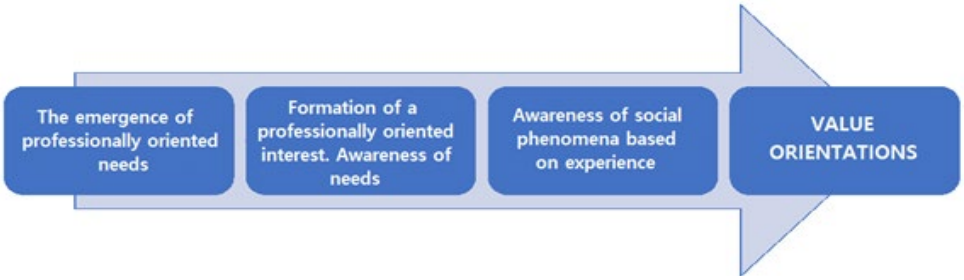

Fig. 1. The mechanism for the formation of value orientations
Рис. 1. Механизм формирования ценностных ориентаций

The hypothesis is that if the components and criteria for transforming professional value orientations in the context of their Internet socialisation are identified for IT students, then it is very likely that students in other fields will follow the same path with minor changes in the future.

On the basis of a first-time analysis conducted on the resources of professional Internet socialisation of IT students, Table 2 presents in a fragmented way popular IT forums as well as sites that have chat rooms for professional communication. They are driven by the emerging need for consultation on professionally-oriented issues in the IT field. This is consistent with the initial stages of the value orientation mechanism in Figure 1. Obviously, sustainable operation of resources is not possible without the need for professional communication on new occasions and without the interest expressed by young students.

Table 2 shows that social networks, forums and online communities are filled with professional communication, issues of professional mutual assistance, discussion of issues related to programming, maintenance of office equipment, IT competitions, selection and maintenance of operating systems, information security issues, issues of mobile application development and many others. In the relevant column on the website, one can see the possibility of any users communicating according to their professional interests.

The major IT companies – the world leaders organise network interaction and training in a slightly different way. Table 3 presents forms and types of interaction and communication based on the examples of well-known companies (according to internet rankings). In order to understand its scale in comparison with others, the market value of the company, the company name and a link to the home page of the official website are given.

Large companies actively promote educational courses for a variety of purposes, ranging from familiarisation with the specifics of a company's operations to highly specific professional courses on the needs of IT specialists for a particular training profile. The organisation of large-scale networking events by large companies is driven by the need to adapt to the requirements of a particular company's professional IT community and to provide consulting on professional issues. It is important to note that the need being formed is of a reciprocal nature and is also consistent with the initial stages of the value orientations mechanism in Figure 1. It is clear that the active development of the Internet infrastructure of the world's biggest IT leaders is impossible without a strong professional necessity and a sustained interest in professional communication on new occasions on the part of students.

For professional communication (in the context of Internet socialisation), the Telegram channels, fragmentarily presented in Table 4, are important. Their distinctive feature is that most of them are run by current or former employees of large IT companies with unique professional experience.

The table includes the link to the channel, its name, the topic of the channel and the name (if there are problems following the link). Thanks to the resources listed in Table 4, it is possible to find a lot of relevant and useful information from the personal experience of employees of large IT companies, to ask questions, to consult and much more. Also, among the featured resources are news channels, an IT humour channel, a chat room with vacancies around Russia, useful links, articles and much more.

There is a persistent need for unique professional experience and knowledge of the highest level. This need also forms a professional interest, which is consistent with the logic in Figure 1.

Certainly, the conducted sample is fragmentary, but according to this it is quite possible to draw a conclusion about the emerging new form of Internet socialisation among young people in the professional community and the transformation of the professional value orientations system, caused by the appearance and awareness of new needs reflected in the activities of websites, awareness of social phenomena taking place on the basis of free access to professional information in the Internet community.

Furthermore, the tables indicate the didactic mechanisms for the adaptation of novice or future specialists. Given the uncertainty and dynamics of the world of future professions, the professional community is looking for ways to address the staffing needs of IT specialists. The professional community is actively developing a system for adapting students and specialists to the constantly changing conditions of their future professional activity.

The adaptability of professional skills is becoming key in the context of digital transformation. A true professional adapts quickly to new conditions. In doing so, attitudes towards work change – through the ability to be relevant and in demand in any changes of the environment; attitudes towards the profession change through the resilience of the profession to changes in the environment; attitudes towards success change through the long-term assessment of the work result. The above also demonstrates the logic and results of transforming professional value orientations through awareness of need and awareness of its social significance.

With the possibility of using a professional online community (for the socialisation tasks of young people), the following factors are added:

1) globalisation factors (it is necessary to know the language, to understand the specificities of the source in cultural terms, to understand

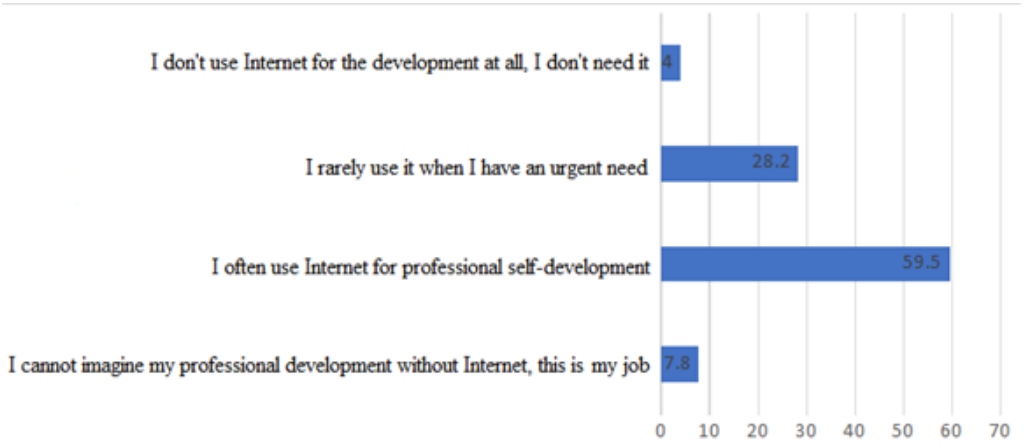

Fig. 2. Distribution of student responses to the question: "Do you use the Internet for your professional development?"

Рис. 2. Распределение ответов студентов на вопрос: «Используете ли вы Интернет для своего профессионального развития?»

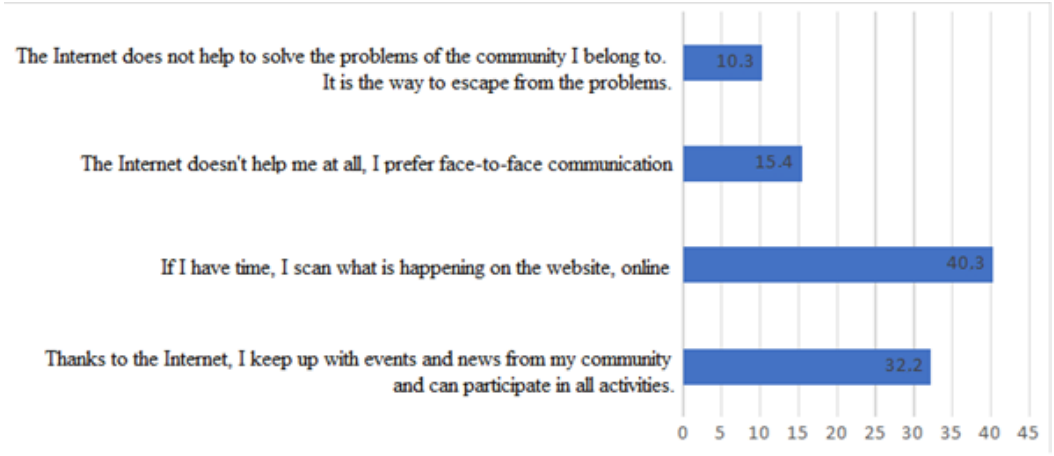

Fig. 3. Distribution of responses to the question: "The Internet helps me to solve problems of the community (corporation) to which I belong?"

Рис. 3. Распределение ответов на вопрос: «Помогает ли мне Интернет решать проблемы сообщества (корпорации), к которому я принадлежу?»

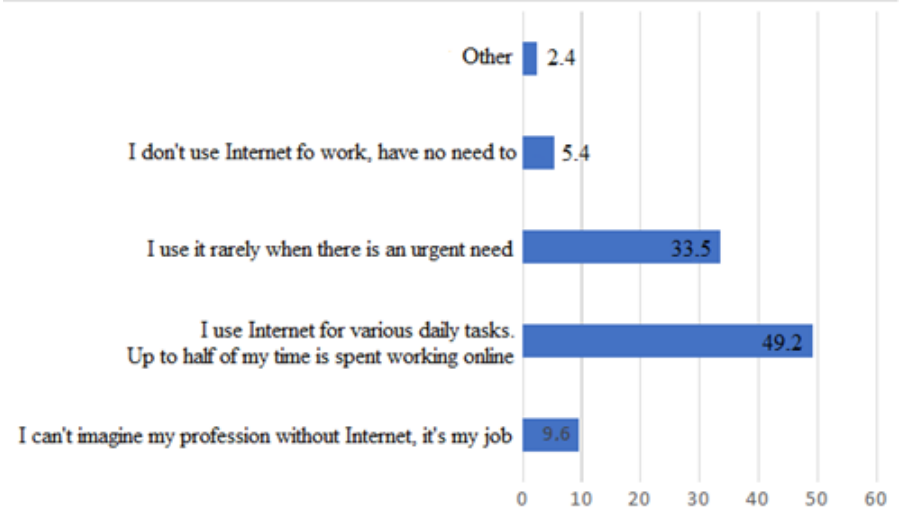

Fig. 4. Distribution of student responses to the question: "Does the Internet help you to solve problems in your professional activity?"

Рис. 4. Распределение ответов студентов на вопрос: «Помогает ли вам Интернет решать проблемы в вашей профессиональной деятельности?»

the specificities of religion in order to gain external experiences);

2) professional duty factors (there are no subordinates and supervisors online, so in order to ask for something, one has to give something);

3) classical socialisation factor (emphasis on universal in all senses approaches to work) is characterised by the limitations of the environment. That is, on the one hand, the environment is wider in terms of the "geo-" component, but solutions to professional tasks are fragmented due to its limitations;

4) practical experience factors (e.g. it makes no sense to recommend air conditioning to the Inuit).

In order to determine whether the "Awareness of social phenomena based on experience" stage (Fig. 1) has been reached, a survey conducted among young people showed that a significant proportion (59.5 %) use the Internet for their professional development (Fig. 2); 72.5 % use the Internet for awareness and understanding of the problems of the community (corporation) they belong to (Fig. 3); 49.2 % use it daily to solve various professional problems (Fig. 4); 53.3 % of respondents indicated that they share the results of professional activities in the Internet, thereby expanding their fold.

Thus, the most advanced IT communities allow for the assumption that in the same way, or close to it, the logic will line up not only for future specialists in IT, but also in other areas.

The specifics of the formation of professional value orientations among young people in the context of the digitalisation of economic and socio-cultural development of society is manifested in the predominance of an active-activity component, the entry of the individual into various profession-oriented and professional communities and is characterised by stages of adaptation, individuality, and integration.

Socialisation first takes place as a process of personal adjustment to the community; then – a demonstration of individuality; finally, entry into the professional community and influence on its functioning.

On the basis of the conducted analysis of professionally oriented websites, types of professional communication online and organisation of professionally oriented counselling and educational services, a theoretical construct (built on the concept of N.A. Samoilik [17] as the basic one) of an individual's professional value orientations under conditions of Internet socialisation and unstable future world of professions can be presented.

CONCLUSION

Thus, as a result of the analysis performed, the criteria for assessing the transformation of the professional value orientations system under conditions of Internet socialisation and unstable professions have been identified and substantiated: the formation of values – relationships with the professional Internet community; the formation of values – knowledge of digital technologies of professional activity and knowledge of the functional possibilities of the Internet environment for solving professional tasks; the formation of values – the goals of achieving a high level of fulfilment of professional needs in the Internet environment and confidence in self-fulfilment in the future world of professions; the formation of value – the result of Internet socialisation in the professional environment, satisfaction in achieving one's professional needs; the formation of value – the quality of rapid professional self-adaptation in a changing world of professions using the functional possibilities of the Internet environment; the formation of value – the ability to apply Internet technologies and to realise oneself in a profession.

It has been established that the most sensitive components of the transformation of value orientations can be: values – relations with the professional online community; values – the qualities of rapid professional adaptation and self-adaptation in a changing world of professions using the functional possibilities of the Internet environment.

The instability and inconsistency of professional value orientations in the changing world of future professions actualises the necessity to strengthen the role of the state, educational institutions and business communities in professional and educational interaction, taking into account the newly identified criteria and the most sensitive components of transformation.

Table 2

Resources for professional Internet socialisation of computer scientists

Таблица 2

Ресурсы для профессиональной интернет-социализации ученых-компьютерщиков

Access mode	Resource name	Topic of discussion	Roles on the site	Note
1	2	3	4	5
http://www.cyberforum.ru/	Forum for programmers and sysadmins "Cyberforum"	Correct programme code writing, typical mistakes, instructions, useful tricks, training tips, video conferences, video settings, ways to solve technical and software problems, advice on choosing technical solutions, issues of office software operation, etc.	Moderator, expert, user	Programmers, novice developers, amateurs
https://infojournal.ru/	Forums on the portal "Publishing House "Education and Informatics" (INFO)"	Discussion of informatics methods and content at school, educational standards, textbooks, informational educational environment, etc.	Moderator, user	Computer science teachers, guests
https://interface31.ru/forum/index.php	IT Specialist Forum "Notes of an IT specialist"	Issues of operation of operating systems, computer networks, network software and equipment, their features and settings, private announcements, professional humour, etc.	Moderator, expert, user	Programmers, novice developers, amateurs
https://news.ycombinator.com/news	News website "Hacker News"	Software code bugs, correctness of mobile applications work, latest world news, features of popular web browsers, ad blockers, etc. Online fraud stories, the issue of website administration, analysis of lessons in video games, discussion of PC security, password protection, personal data protection, etc.	Moderator, user	Programmers, developers, guests
https://qna.habr.com/	Multifunctional resource "Habr"	Proper program code writing, typical mistakes, instructions, useful tricks, training tips, ways to solve technical and programming problems, analysis of popular Windows bugs, tests for programming languages, vacancies for IT specialists, tips for choosing books and video tutorials on programming, office software issues, instructions for installing and configuring operating systems and software, etc.	Moderator, expert, user	Programmers, novice developers, amateurs
https://www.codeproject.com	Forum for IT specialists and beginners "CodeProject"	Discussion of software development problems, code bugs, pros and cons of different programming languages, PC operating systems. Issues of web development, Android and iOs development, general issues of mobile communications development, marketing and software sales. Discussion of SQL and ADO database access, hosting and managing server discussions, etc.	Moderator, user	Programmers, developers, amateurs, novice IT specialists
https://www.sitepoint.com/community	Forum for IT specialists and beginners "SitePoint"	Issues related to page structure and layout from HTML5, discussion of styling issues, browser bugs, requests for multimedia and adaptive design. Development for mobile devices. Issues related to general web design, graphic design, user interface, UX and other interface related technologies. Discussion of content management systems, SEO settings, plugins and user tips for Wordpress, Joomla, Drupal and many others	Moderator, expert, advisor, user	Programmers, novice developers, system administrators, IT students, amateurs

End of Table 2
Окончание таблицы 2

1	2	3	4	5
https://www.reddit.com/	Forums on the website “Reddit”	Discussion on the achievements of the heads of major IT companies and the activities of these companies. General programming issues. Errors in the operating system and browsers. Issues in software development for PCs and mobile devices. Discussion of the advantages and disadvantages of new programming languages, the latest world IT news.	Moderator, user	Programmers, novice developers, system administrators, IT students, amateurs
http://iforum.pro	Forum for IT specialists “iforum”	General programming questions, help with code writing, error analysis, overview of visual components, setting up a visual environment. Issues of search engine optimisation, promotion through social media, help for beginners in this field. Discussion about the components of a desktop computer, testing them, replacing them. Job options in IT field, freelancing (website production, promotion, optimisation, etc.). Discussion of legal issues in the IT sector. Advertisements for the purchase, sale, exchange of peripherals, PC components, etc. News, exhibitions and events in the IT industry and much more.	Moderator, user	Programmers, novice developers, amateurs, guests
https://stackoverflow.com/	Community of programmers “Stackoverflow”	Analysis of popular compiler errors. Mistakes in the work of the various teams, an overview and ways of solving them. Help with the translation of programme code from one programming language to another and its development. Popular code errors, computer networking issues. Discussion on the operation of office programmes, Android and Ios operating systems, etc.	Moderator, user	Programmers, developers, amateurs

Table 3

IT companies with the possibility of educational and project communications for future specialists

Таблица 3

ИТ-компании с возможностью образовательных и проектных коммуникаций для будущих специалистов

Electronic access	Name of the IT company	Training opportunity	Market value of the company
1	2	3	4
https://www.apple.com	Apple	Apple University – an educational programme for interns and new employees of the corporation. The programme was launched by Steve Jobs in 2008. The main objective of Apple University – to provide a year-round introduction to the history of Apple and its core values for aspiring employees. It is not compulsory to attend, but the lecture registration is almost always full. Having completed an internship in the summer or combining it with the studies, it is possible to work on important projects on the Apple campus. Becoming part of the team allows one to see the work from the inside and the people leading the company forward. The company welcomes college and university students and master's students for internships	~$540 billion
https://about.google	Google	Google internships last from 12 to 14 weeks with 40 hours per week. The intern works in a team and is supervised by a manager. There are 2 types of programmes available to students: Engineering & Technology (hardware, software, mechanical engineering, product management, user design), Business	~$383 billion
https://www.microsoft.com	Microsoft	Microsoft regularly offers the opportunity for undergraduate, graduate and postgraduate students and recent university graduates to take part in one of its internship programmes. The interns will work on real projects and can thus improve their professional skills or give a good start to their career. The company offers internships in all areas of company employment. The company regularly recruits interns for internships in Microsoft offices located around the world	~$331 billion
https://www.oracle.com	Oracle	Oracle Academy offers a wide range of free learning opportunities in a variety of formats for participants-teachers, making learning very convenient. Classroom-based learning – interactive learning in the classroom under the guidance of a teacher. Virtual and classroom learning – a blended form of training, involving teacher-led virtual instruction followed by classroom learning. Virtual learning – a virtual, teacher-led online collaborative learning – an ideal option for teachers who find it difficult to participate personally in the training. Self-learning – course materials for independent study will help students to master the material on their own	~$186 billion ($186.43)
https://www.ibm.com	IBM	The company offers training at an IBM training centre. The courses are divided into three categories: "beginner", "specialist" and "expert". The course materials are designed in full compliance with the best practices. The materials are constantly being improved in line with changes in the industry. Attendees on IBM courses receive an internationally recognised certificate with a seal	~$186 billion ($185.77)
https://www.amazon.com	Amazon	The company provided access to more than 30 different courses for a total of 45 hours. They are designed for developers, experts in Data Science and other specialists. The courses are available for free The company notes that each course begins with the fundamentals and provides an opportunity to learn machine learning from real-world examples of problems Amazon employees have had to solve. After completing the course, Amazon offers to take an exam and become certified as a machine learning specialist – AWS Certified Machine Learning – Specialty	~$144 billion

End of Table 3
Окончание таблицы 3

1	2	3	4
https://www.cisco.com	Cisco	Cisco offers a wide range of certification, training and testing programmes that meet the needs of IT specialists, partners, employees and students. Communicating with Cisco experts at conferences, exhibitions and virtual events helps to learn about the latest products, technologies and networking solutions	~$128 billion
https://www.intel.com	Intel	Intel offers three forms of internships: year-long, summer internships and apprenticeships. For summer internships, apprenticeships and traineeships, there is a "competition" for applications, usually submitted from hh.ru (the official Intel group on VK redirects all those interested to the online site of this recruitment agency). Once the hiring manager approves the application, the candidate is interviewed. The next stage: a specially designed professional test for those applying for an internship at Intel. The candidate should: be at least a 2nd year full-time undergraduate, graduate or postgraduate student; have a relevant academic background; have an excellent knowledge of English; be able to work in a team; have knowledge of programming language	~$111 billion
https://www.sap.com	SAP AG	The SAP Training Centre offers the most modern and efficient ways of learning. In-class training – a modern SAP Training Centre in Moscow and more than 400 up-to-date seminars on the schedule are available. The classes are taught by the best expert practitioners. SAP Live Class distance learning – learning in a virtual classroom under the guidance of SAP experts. A student can instantly connect to a seminar on their computer and take part in a workshop – almost like in a real classroom. Blended learning with SAP Blended Learning Academy – an optimal combination of training formats, all the knowledge a consultant needs – from initial concept to implementation and operation of business applications, comprehensive training for certification. Online E-learning – many of the seminars are available in electronic format for independent learning	~$91 billion
https://yandex.ru/company	Yandex	The company offers training for new employees in "Yandex Academy" – a project for those who are interested in information technology and want to develop in this field. It introduces modern approaches to development, design and management, and covers the creation of Internet products and data analysis. Here one can enrol in courses and schools, apply for an internship at Yandex or participate in a programming competition. The online courses will not only provide students with the necessary knowledge from Yandex employees and invited experts, but will also give them hands-on experience	~$12.3 billion
https://www.kaspersky.ru	Kaspersky Lab	It is possible to sign up for trainings and attend them in person at various training centres, a list of which will be provided when signing up. Online learning – allows to choose an individual timetable and take courses in the comfort of one's own home. After completing the training, there will be an opportunity to prove the knowledge and complete the certification	~$980 million
https://1c.ru	1C	The company offers both in-person and distance learning opportunities. There are full-time training centres in various cities of Russia and abroad. Registration for distance learning courses is carried out on the official website and courses are held online. The basics of 1C development can be learned at most technical colleges	~$550 million

Table 4

IT channels

Таблица 4

ИТ-каналы

Electronic access	Chat title	Discussion topics	Chat name
https://t.me/hireproproduct	"Vacancies No Flame No Game"	The best vacancies in Russia and abroad are published	@hireproproduct
https://t.me/ponchiknews	Ponchik News	A channel with links on the subject of product design and strategies from Alexey Ivanov (former employee of IDEO, Philips Design, currently an employee of SYPartners)	@ponchiknews
https://t.me/qetzal_1up	Qetzal-1UP channel	Author's notes and thoughts on the subject of product management	@qetzal_1up
https://t.me/uxhorn	UX Horn	Selected materials from the best Russian UX groups. A huge amount of quality information	@uxhorn
https://t.me/themarfa	All-in-One Person	A channel with discounts on paid programmes, notes on new or interesting services and apps	@themarfa
https://t.me/pinkponies	"Land of pink ponies"	Fascinating stories about corporate culture and people management from a Google employee	@pinkponies
https://t.me/design_without_cats	Design without cats	Useful links about web and graphic design	@design_without_cats
https://t.me/ctodaily	"launch tomorrow"	Weekdays of a technical director (ex-CTO Meduza, Bookmate, RAWG, Pure). Lots of interesting things about the development process and the "mastering" of new technologies in a working product	@ctodaily
https://t.me/myshli_channel	Being Danil Krivoruchko	Notes from New York's top designers	@myshli_channel
https://t.me/temno	"Dark Side"	The "dark side" of development. Lots of interesting analytics and notes from personal experience	@temno

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