SOCIO-PSYCHOLOGICAL PROBLEMS OF ORGANIZATION AND MANAGEMENT

DOI https://doi.org/10.30525/978-9934-26-114-5-13

PROFESSIONAL COMPETENCE CHARACTERISTICS OF INFORMATION AND COMMUNICATION TECHNOLOGY SPECIALISTS

Astakhov D. V.
Postgraduate Student at the Department of Psychology
Vasyl' Stus Donetsk National University
Vinnytsia, Ukraine

The modern IT industry needs highly qualified specialists capable of developing software for any field of activity, production or personal needs. It should be noted that the range of requests for quality and convenient programs needed for meeting professional and other living needs is quite wide. Therefore, currently this area of professional activity is quite developed and complex, which leads to high demands from specialists in this field. This profession requires a broad range of interdisciplinary knowledge and meta-competencies.

According to modern researchers, a software engineer is a specialist who works not so much with a computer as a technical device, but with information, because he/she develops algorithms that enable people to solve a problem most effectively. These algorithms are designed using special characters «intelligible» to the computer [3].

It is essential for programmers to master the means of design in the material world, including the technosphere and information sphere, the ability to create various programs using any programming language, knowledge of modern computer information processing technologies, the capacity to establish and maintain contacts, clearly express one's thoughts and work in a team.

The leaders of the most developed IT companies in Ukraine, such as EPAM, Ciklum, GlobalLogic, Luxfot, identified the mandatory skills of a modern successful IT specialist. Among the most important skills are English language proficiency, as this area of activity involves the active involvement of specialists in the international development teams, as well as working with foreign customers; ability to work in a team when implementing projects; effective communication skills; being consistent in

the process of project implementation, starting from the first communication with the customer to the presentation of the finished software product [2].

Modern programming is usually collaborative, and the usefulness of an individual programmer is closely related to his/her usefulness to the whole team, and therefore requires teamwork skills. An IT professional should possess not only the necessary professional skills, but also a number of the so-called soft skills.

Analyzing the «soft skills» of IT specialists, five groups of main components could be distinguished, which make up the structure of this multifaceted formation [2]. Thus, the first group is represented by communication skills. This group includes the following «soft skills»: ability to work in a team, capacity to communicate effectively using various tools, interpersonal interaction, ability to persuade, resolve conflicts, make group decisions, conduct presentations. It should be emphasized that the communication skills of an IT specialist are extremely important for the successful implementation of professional group interaction, as software development teams can work remotely and the ability to communicate and interact with each other increases the chances of effective project cooperation. Utilization of communication skills is also necessary in the process of working with customers. The components of effective communication are the included active listening, the ability to ask questions correctly, speak concisely, and the ability to deal with objections.

The second group encompasses skills of personal effectiveness, which include time management skills, responsibility, resilience, ability to achieve goals, creativity and analytical thinking. It is extremely important for a specialist to be proactive and innovative, to constantly improve, which will promote opportunities for getting involved in new interesting projects using the latest technologies. The third group includes management skills, which are based on a number of teamwork competencies, including the ability to unite the team, establish a system of communication between team members, ability to motivate employees, developed business leadership skills. The fourth group of competencies is represented by the skills of strategic decision-making, ability to work in risky conditions, plan one's activities, and delegate authorities. The competencies of the fifth group are characterized by information management skills, which involve the development of critical thinking, ability to analyze, synthesize data, evaluate information, and make decisions.

When considering the software engineer's professionalism, researchers also identify qualities that are directly related to the creation of a software product and psychological and human traits that should be intrinsic to a programmer. Thus, for the successful work of an IT specialist, the following personal characteristics and psychological features are essential: complex thinking, i.e. the programmer must move freely from the description of the

problem in general terms to the essence of the lower level behind these concepts; ability to imagine a process that is projected in dynamics; ability to generalize typical situations, most new ideas should be in close interaction with already known ideas and methods; capacity to modify programs; analyze one's own mistakes; ability to work in a team, as almost any serious project is collective in nature, and the success of the work depends on mutual understanding, distribution of functions and relationships in the team; understanding of the user's needs [1, p. 130].

The success of a software engineer's work also depends on his/her overall ability to comprehend programs. In programming, comprehension has a lower level (understanding of each line of code), a middle level (understanding of the structure of the algorithm and data) and a higher level (understanding of the general purpose of the program). The ability to modify programs is also of essence [1, p. 131].

Integral determinants of successful performance also include: flexibility and strategic thinking; creative properties of thinking; attentiveness, which is manifested in the ability not to make mistakes; logical nature of thinking; high efficiency and diligence in work; efficiency of thinking; ability to make decisions in a limited time; ability to organize one's activity in such a way that helps increase productivity. A necessary condition for the successful operation of a programmer is the development of critical thinking [1, p. 131].

Analysis of scientific literature, forums, blogs and personal experience with a team of IT professionals shows that in order to maintain professionalism, a software engineer must be constantly aware of many new technologies, know new methods of solving certain problems, constantly acquire new knowledge and skills [5].

Based on the fact that software development depends on a team collaboration and involves solving complex and cumbersome tasks that cannot be properly performed alone in time even by highly qualified professionals, effective group dynamics and professional communication are vital for productive implementation of software lifecycle processes, creation and implementation of various projects [4].

Thus, summarizing the above mentioned, it can be concluded that the implementation of professional activities in the field of information and communication technologies requires from specialists not only relevant professional knowledge and skills, but also a number of developed soft skills. Given the fact that most professional tasks (projects) in this area are implemented in the form of group activities, issues related to the optimization of group interaction processes of the project team which members should be characterized by a high level of group compatibility are becoming of great importance, which will certainly contribute to efficiency and productivity of professional activity.

References:

1. Божко Ю. П. Професійна успішність програмістів. *Актуальні проблеми соціології, психології, педагогіки.* 2013. № 4(21). С. 128–135.
2. Глазунова О. Г., Волошина Т. В., Корольчук В. І. Розвиток «soft skills» у майбутніх фахівців з інформаційних технологій: методи, засоби, індикатори оцінювання. *Open educational e-environment of modern University, special edition.* 2019. P. 93–106.
3. Круглик В. С., Осадчий В. В. Міждисциплінарний підхід у професійній підготовці майбутніх програмістів. *Збірник наукових праць. Педагогічна освіта. Теорія і практика. Психологія. Педагогіка.* 2017. № 27. С. 46–51.
4. Сидорова Н. М. Групова динаміка та комунікації в інженерії програмного забезпечення. *Інженерія програмного забезпечення.* 2012. № 3-4. С. 37–46.
5. Щедролосьєв Д. Є. Компетентнісний підхід до підготовки інженерів-програмістів. *Інформаційні технології і засоби навчання.* 2011. № 4(24). URL: http://www.nbuv.gov.ua/old_jrn/e-journals/ITZN/2011_4/11 schdey.pdf

DOI https://doi.org/10.30525/978-9934-26-114-5-14

МОДЕЛЬ МЕТОДИЧНОГО СУПРОВОДУ ФОРМУВАННЯ ІНФОРМАЦІЙНОЇ КУЛЬТУРИ ПЕДАГОГІВ ЗДО

Лахман Д. О.
студентка спеціальності 012 Дошкільна освіта, освітнього рівня другого (магістерського), освітньої програми 012.00.01 Дошкільна освіта
Педагогічний інститут Київського університету імені Бориса Грінченка

Коваленко О. В.
кандидат педагогічних наук, доцент,
доцент кафедри дошкільної освіти
Педагогічний інститут Київського університету імені Бориса Грінченка
м. Київ, Україна

Актуальність звернення до тематики інформаційної культури педагогів дошкільних закладів пов’язана з тим, що розвиток суспільства в сфері дошкільної освіти на даній стадії характеризується