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SOFT SKILL IN THE FORMATION OF THE COMPETENCE OF A MODERN IT SPECIALIST

Introduction

As the experience of developed countries shows, qualifications and knowledge, as well as the number of years of experience are static characteristics that are not only insufficient for adequate evaluation of candidates and selection of the best, but also - insufficient for effective company and staff management. That is why in many countries today competences are used as the main criterion for assessment and selection of a specialist.

Purpose, scope and research method

The purpose of the study is to theoretically substantiate and experimentally test the concept of student-centered learning and the conditions for the formation of general competence of bachelors in the field of computer technology on the basis of soft skill in higher education.

The subject of research - the main approaches and conditions for the formation of the general competence of bachelors in the field of computer technology on the basis of soft skill in higher education.

Research methods. To achieve the goal in the work used research methods due to the nature of the problems that arose in the process of work: methods of general systems theory, abstraction, analysis and synthesis, induction and deduction, methods of student-centered learning, empirical analysis and method of analytical modeling - for the analysis of soft skill formation in the educational process; methods of mathematical statistics for processing the obtained experimental data and determining the integrated assessment of the motivational potential of the student according to the method of R. Hexan and G. Odham.

Research results

According to the Law of Ukraine "On Higher Education", competence is a dynamic combination of knowledge, skills and practical skills, ways of thinking, professional, ideo-logical and civic qualities, moral and ethical values, which

determines a person's ability to successfully carry out professional and further educational activities. the result of learning at a certain level of higher education.

Competencies are practice-oriented and are determined on the basis of an analysis of the nature of work in the position, key job responsibilities (functions and powers), and so that they reflect the basis of the requirement for «professional and personal behavior» of those who will hold these positions. In turn, they can be integrated, general and special (pro-fessional).

Competences that are conventionally divided into hard skills and soft skills have be-come widely used in the practice of selecting specialists in the company.

1. hard skills - specific knowledge to perform specific tasks in everyday work. This knowledge and skills, without which you can not do in a particular position. For IT profes-sionals - this is technical skills related to professional qualifications, for example: pro-gramming languages, data transmission protocols, principles of network construction, secu-rity standards, virtualization systems, knowledge of analysis systems, knowledge of a for-eign language, etc. . These skills are acquired during education in educational institutions, courses, trainings, etc.

For reference. In 2019, cloud computing, artificial intelligence and analytical calcu-lations topped the global list of the most popular solid skills LinkedIn. LinkedIn Learning is a network of more than 660 million professionals and 20 million jobs. In 2020, the block-chain skill was added to this list, which tops the list of the most popular solid skills for 2020.

2. soft skills are personal non-specialized skills that help to cope with life and profes-sional affairs. These are the basic skills of interpersonal interaction, which form the ability to do things more efficiently and use new opportunities. Soft skills are formed from child-hood and develop in the individual throughout life (eg, empathy, public speaking skills, the ability to find common ground with the team, leadership, self-confidence, ability to make decisions and present a project, etc.). They are useful in all areas.

For reference. According to LinkedIn [8], in 2020 soft skills will be led by creativity, cooperation, persuasion and emotional intelligence - all skills that demonstrate the effec-tiveness of working with others and the ability to generate new ideas.

Information on the list of «soft skills», presented by various sources, is given in table 1.

Table 1. List of «soft skills» by priority sources of information

№	Source of information	List of «soft skills»
1	«Microsoft» [5]	oratory and communication skills; creation of presentations; project management; high level of self-organization.
2	British platform of Internet Learning SkillsYouNeed [5]	leadership ability to work in a team adaptability interpersonal communication decision-making
3	LinkedIn [8]	creativity belief cooperation adaptability emotional intelligence
4	work.ua [9]	communication skills analytical and critical thinking ability to listen ability to work in a team ability to set and achieve goals active life position and positive emotional attitude ability to resolve conflicts ability to be inspired by new ideas ability to take responsibility self-organization and self-discipline

Source: Own survey

From the table we can make the conclusion that the most valuable «soft skills» among the presented foreign sources of information are communication skills, teamwork, adaptability and self-organization. On domestic job search sites and employment promotion centers, employers point to dozens of different skills, skills that they would like to see in job candidates in their companies. According to the job search site work.ua [9], the top 5 such «soft skills» include: communication skills, analytical and critical thinking, the ability to listen, work in a team, set and achieve goals, active life position and positive emotional atti-tude.

The most demanded employee today is who can master complex material within a short time and effectively use knowledge in practice. Feel organic in new, unusual condi-tions and at the same time find non-standard problems solutions.

Consider the rating of basic soft skills that contribute to the acquisition of a high lev-el of professional competence by a student in a higher education establishment State Univer-sity «Zhytomyr Polytechnic».

Table 2. Rating of «soft skills» in ensuring the professional competence of an IT specialist

Rating soft skills	The main components of competence
Art and creativity	– ability to take a non-standard approach to solving problems; – ability to produce «rare» ideas, different from the generally accepted, typical; – tendency to use symbolic, associative means to express your thoughts; – high level of association and ingenuity; – desire for practical realization of your creativity.
Beliefs and communication	– oratory skills; – ability to persuade the colleagues and interested parties; – ability to effectively convey ideas; – openness to communication and new contacts; – skills of convincing argumentation; – skills to conduct effective business conversations; – choose and actively use modern and most appropriate information tools and communication channels.
Cooperation and teamwork	– ability to well-coordinated and mutual understanding; – establishing social ties, contacts; – tendency to close interaction with other people; – tolerance and impartiality in relation to other people's views; – ability to establish business and friendly relations between people; – propensity to moderate risk, balancing your own and public interests; – skillful use of mechanisms of human interaction (affection, sympathy, antipathy, trust, respect, etc.); – ability to present yourself, correctly evaluate the reaction of partners, to catch the slightest changes in the situation.
Adaptability and flexibility	– ability to have a positive attitude to changes; – ability to show open professionalism; – stress resistance; – lifelong learning; – desire to change and help others in this; – change their behavior depending on the circumstances and react to the behavior of the partner; – willingness to switch flexibly and quickly from one idea to another.
Emotional intelligence	– ability to perceive, evaluate and respond to their own emotions and the emotions of others; – awareness of your own feelings, emotions and motivations; – ability to physically control body movements; – ability to logically analyze the problem, identify patterns and use logic;

	– ability to operate with words, symbols; – the ability to direct collective emotions in the right direction, create an atmosphere of «friendliness» and skillfully deal with negative moods.
Time management	– ability to set priorities; – plan actions and tasks; – ability to structure any of your tasks and plan resources for their implementation; – ability to learn and self-development; – do as much as possible, minimizing time and reducing stress; – self-organization and delegation; – ability to fully relax and work well; – organize a messaging system on the basis of modern information technology.
Leadership and charisma	– high level of self-motivation; – ability to like, inspire people and influence the opinions of others; – open mind and professional assistance to others; – modernity and level of technology use; – public speaking skills; – passion for business; – mentoring and coaching; – ability to open new opportunities in people and realize them for the public good; – the ability to see in the simple complex, in the complex - simple, to formulate it in a language understandable for all.

Source: Own survey

To ensure the formation of a competent competitive IT specialist capable to research and innovative thinking, the teaching system of students of the State University «Zhytomyr Polytechnic» actively uses innovative teaching methods aimed at improving learning in the process of interaction between teachers and students that motivate development of important active participants in their own learning and formation of soft skills in students . Here are some teaching tools and information and computer technology for soft skills development.

1. «Creativity and creativity»:

☐ Application of the method of «Socrates dialogue» for the development of art to competently ask questions, direct the dialogue, compose its algorithm, anticipate possible answers and prepare in advance the following chains of questions.

☐ Applying the method of «brainstorming» to organize joint group and creative work in order to find fruitful and creative ideas for writing a joint project (business plan) or solving problems in the IT industry.

☐ Application of the method of creative thinking to generate ideas in business planning and create projects of advertisements, business cards, posts on

social networks, slogans, etc. based on verbal associations, analogies of assumptions, sieving and evaluation of ideas.

☐ Application of the method of business (role) game in order to create a situation as close as possible to the real one, in which the student must show his professional abilities.

☐ Participation in trainings and coaching under the program «Active Citizens» from the British Council.

2. «Beliefs and communication»:

☐ Formation of content for creating video presentations on various topics (self-presentations, learning motivations, the importance of the IT industry, etc.) and reports of your own scientific and practical research (business plan, flyer, business card, etc.).

☐ Participation with speeches, reports and speeches at seminars, round tables, conferences on current issues of formation and development of IT specialists.

☐ Writing essays, abstracts, self-presentations, summaries on various topics and target audience.

☐ Application of the interview method during the preparation of motivational video presentations by forming questions, recording answers from IT experts. Expressing your own point of view and discussing it in a group.

☐ Use of effective communication channels for the purpose of information transfer, in particular: Google Docs (presentation), YouTube, Power point, Prezi, Google Meet, Big Blue Button.

☐ Acting as a speaker in the process of presenting the results of group research, projects, reports, video presentations, round tables, conferences, etc.

☐ Application of progressive methods of establishing business communication: the ability to conduct «small talk», the narrator's method «storytelling», «strategic conversation», etc. based on modeling situations from business cases and personal examples from life.

☐ Applying the method of convincing argumentation in presenting your own point of view and constructing arguments in favor of convincing others of it.

3. «Cooperation and teamwork»:

☐ - Using the method of «stage setting» through the discussion of current issues in the IT industry, assumptions and perceptions of this topic by students in research circles and meetings, round tables with employers and industry experts in the region.

☐ Applying the method of «visioning and futuring» to predict a problem or topic, development or change in the future (for example, employment prospects in the IT industry of a young specialist).

☐ Application of the method of small groups to compare the results of the task, their analysis, evaluation of the best option (for example, the distribution

of project tasks according to different roles of the student in the group: leader, tester, organizer, analyst, developer, designer, technologist, auditor).

☐ Support of joint organization of group work on processing of general information by technical means: Microsoft Office 365, MoodleCloud, Onedrive, Google Drive, etc., and knowledge base of own educational platform of Zhytomyr Polytechnic https://learn.ztu.edu.ua/ and site of educational institution https://ztu.edu.ua/

☐ Support for team work on projects with Microsoft Office and Google Docs tools (program for working with tables, documents, etc.).

4. «Adaptability and flexibility»:

☐ Taking special training courses on the Courséra educational platform.

☐ Participation of students in competitions of scientific student works, hackathons, scientific circles, meetings with leading experts in the field of the region, politicians, famous artists, etc.

☐ Participation of students in all-university events of sports, ecological, cultural and artistic direction.

☐ Participation of students in: the project «scientific school of computer mathematics and optimization of calculations»; IT training projects for beginners and professionals in the areas of «Fundamentals of programming, Web-technologies and data processing, software testing» and «Network technologies»; international cooperation projects with the University of Applied Sciences in Rotterdam - students are trained in programming languages, design, project management, testing and database development in leading IT companies; web design, computer graphics, photography or video editing courses; project «Startup Club» of the State University «Zhytomyr Polytechnic».

5. «Emotional intelligence»:

☐ Application of the method of analysis of team work (business plan, advertising slogan, post on social networks, video presentations), which expands knowledge and understanding of the problem, develops the ability to be critical of opposing views.

☐ Modeling situations related to the use of a group of psychological ways of influencing the interlocutor, for example: persuasion, suggestion (self-suggestion), mental infection, imitation and ethical-motivational techniques, such as manipulation.

☐ - Performing tasks related to: recognition of emotions based on photos of facial expressions (Microsoft Emotion API service), studying the peculiarities of student perception of a person's portrait based on the description of his qualities and professional characteristics.

☐ Analysis of the importance of emotional intelligence based on videos of well-known TED speakers, business leaders and speakers.

6. «Time Management»:

☐ Perform tasks related to: scheduling work for the day, places, year, including the use of Google Calendar services and Google Meet video conferencing.

☐ Modeling of business processes related to the creation of IT products (for example, the creation of a mobile application for ordering taxis, food, etc.).

☐ Planning the business process «first contact with the client», creating a flowchart of the process of «interviewing during employment». Communication tools for solving these tasks are: Task Managers, for example: Asana, Basecamp 3, Jira, Redmine, Todoist, etc.; online correspondence services (e-mail): Yahoo! Mail, Hotmail from Windows, Gmail, etc.; organization of video conferencing, video calls, group chats, web conferencing, etc., for example: Microsoft Teams, Google Meet, Zoom, GoToMeeting, Kato, GoogleHangouts, telegram, viber, etc.

7. «Leadership and charisma»:

☐ Application of the method of coaching groups based on the distribution of roles among students on the coach and the client, building interaction between them in the context of modeling their own prospects and motivating development in the field of IT technologies.

☐ Work on the accuracy and expressiveness of speech based on explanations of the meaning of phraseological units and the creation of phrases with certain words.

☐ Modeling the «recipe» of charismatic leadership based on examples of charismatic personalities in various fields.

☐ Research of attributions (obstacles, factors, situations) in everyday life.

☐ Self-assessment of leadership skills based on testing.

☐ Participation of students in the project «mentoring (mentoring)».

The analysis of methods and approaches of student-centered learning shows that students have the opportunity to obtain quality and interesting education, the university has all the necessary conditions for learning, development and acquisition of practical skills in the chosen specialty. In addition, the student himself must be interested in learning and obtaining a quality education.

The paper evaluates the motivational potential of first-year students of the Faculty of Information and Computer Technologies of Zhytomyr Polytechnic by the method of R. Hexan and G. Odham, the essence of which is to determine an integrated assessment of motivational potential of students based on groups of factors that shape and develop interest in learning, in particular such as: diversity of education; efficiency of training organization; the importance of training and motivation for entry; autonomy of the educational process for students; feedback in learning.

The factors presented in the questionnaire reflect the level of satisfaction of educational needs of students in higher education and serve as a basis for

increasing the level of motivation in learning in all stakeholders of this process. The obtained individual indicators were grouped and presented in table 3.

Table 3. Distribution of students of the Faculty of Information and Computer Technologies by the level of motivational potential in education at Zhytomyr Polytechnic

Level of motivation	0 missing	1 «low»	2 «below average «	3 «avera ge «	4 «high»	Total
Rating scale, points	(1-7)	(8-63)	(64-215)	(216-511)	(512-1000)	
Number of surveyed students, people	4	14	59	34	12	123
Part of students, y %	3,25	11,38	47,97	27,64	9,76	100,00

Source: Own survey

The analysis of the obtained data according to the presented method shows that out of 123 first-year students only 10% are highly motivated to study, with an average level of motivation - 28%, the largest share is below average - 48% of students, with low - almost 12 «and with a level of» 0 «- 3%.

Among the greatest motivational expectations from studying at the university, first-year students noted the following: self-development, the need for comprehensive intellectual development; obtaining professional knowledge; awareness of the needs in higher education; the need for interesting and diverse learning, etc.

In general, we can note the positive trends in the development of the competence approach in the educational process of the State University «Zhytomyr Polytechnic», which is confirmed by positive assessments and feedback from students. At the same time, the general level of students' motivation to study remains insufficient, as it is observed that the largest share of motivation is below average - 48% of students, ie, to achieve good learning outcomes, students should ensure greater involvement of students in the discipline. .

In addition, the formation of positive learning motives is influenced by the style of communication and attitude of the teacher to students. The modern teacher-leader must be able to interest the student, using methods of active involvement in learning, group work and aim to achieve results. In order to achieve such results, the teacher must create an environment in which the student will be involved in activities that will correspond to his teaching methods to achieve the desired learning outcomes [6].

The pedagogical and scientific-pedagogical environment has a number of features due to which it does not have rules and principles that can be attributed to the usual «managerial» leadership. Scottish researchers have identified the priority qualities you need to have to be a leader, including the main ones [6]: relevance, interest, collegiality, talent, character and confidence.

Conclusions

Thus, competence is a multicomponent phenomenon, which consists of a set of knowledge, skills, abilities, and qualities that determine a person's ability to successfully carry out professional and further educational activities. In this system, the formation of soft skills ensures the competitiveness of the future IT specialist and the level of employee success in the company. Skills such as listening, communicating, empathizing, finding non-standard solutions together, clearly presenting and expressing opinions, transform a technical worker into an interactive team member, part of the professional community and a person of the future. Zhytomyr Polytechnic Higher Education Institution actively uses innovative teaching methods aimed at improving learning in the process of interaction between teachers and students, which motivate students to develop important active participants in their own learning and the formation of soft skills.

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Abstract

Nowadays in the world of fleeting information, the possession of some knowledge in itself is already insufficient, more important is the ability to obtain the necessary information, the ability to use it at the right time with soft skill tools. That is, the modern labor market needs not only a highly qualified specialist in the field of computer technology, ready and able to master information technology, maintain appropriate technical equipment, etc., but also a communicative, creative

specialist, able to present his product, self-improvement, goal setting and make effective decisions, be able to self-regulate, etc.