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TEACHING SOFT SKILLS TO COMPUTER SCIENCE STUDENTS AT FOREIGN LANGUAGE CLASSES

In the competitive job market today, especially keeping in mind how swiftly AI and technology started to reshape it, recruitment requirements go far beyond technical talents and expert knowledge (hard skills), which, of course, are important but not crucial in selecting job applicants. Soft skills are highly prized in the workplace, thus are frequently sought after by many employers. They are seen as a complex set of habits, behavior patterns, attitudes, and traits that are developed throughout the entire life and enable people to effectively navigate their environment, interact with others, perform well, reach their career goals and go ahead professionally.

The article summarizes basic peculiarities of soft skills and stresses their importance for students' life and career advancement. They are called 'the advantage of the future'. The more skills students acquire, the more successful and competitive they will be. The author supports the idea that soft talents should start to be developed long before the university and be constantly improved.

Three groups of soft skills, including personal attributes, communication and social skills, and managerial talents, are specified in the article, various possibilities for training them are also described. Thus, the author suggests implementing active and interactive methods in the process of teaching a foreign language to computer science students to create a favorable learning environment and enhance the development of students' soft skills. The advantages of incorporating interactive TED Talks videos, case studies, project work, role-playing and simulation games in a foreign language training are analyzed in the article.

The author presents the results of the survey conducted among the senior students of Computer science department aimed at analyzing students' soft skills awareness and stimulating soft skills development. The top essential competencies identified by the students included: self-control, self-motivation and self-discipline, time management, team work and collaboration, critical thinking, interpersonal communication and problem-solving. Students' great willingness to improve lacking competencies for the purpose of achieving better employment prospects and efficient career performance is emphasized.

Key words: *soft skills, soft skills development, career, employment, active and interactive training methods.*

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ФОРМУВАННЯ М'ЯКИХ НАВИЧОК («SOFT SKILLS») У СТУДЕНТІВ КОМП'ЮТЕРНИХ СПЕЦІАЛЬНОСТЕЙ НА ЗАНЯТТЯХ ІНОЗЕМНОЇ МОВИ

На сьогоднішньому конкурентному ринку праці, особливо з урахуванням того, як стрімко змінюється він завдяки впровадженню новітніх технологій і штучного інтелекту, вимоги до найму працівників виходять далеко за рамки оцінювання лише їх технічних навичок і експертних знань (твердих навичок), які, зазвичай, є важливими, але не вирішальними при відборі кандидатів на роботу. М'які (гнучкі) навички високо цінуються на робочому місці, тому на них часто звертають увагу роботодавці. Цей термін розуміють як складний набір звичок, моделей поведінки, ставлень і особистісних рис, які мають розвиватися протягом усього життя і дозволяють ефективно орієнтуватися в навколишньому середовищі, взаємодіяти з різними людьми, добре виконувати поставлені завдання, досягати кар'єрних цілей і просуватися в професійному сенсі.

У статті узагальнено основні особливості м'яких навичок та підкреслено їх важливість для життя та кар'єрного просування студентів. Чим більше навичок отримують студенти, тим успішнішими та конкурентоспроможнішими вони будуть. Автор підтримує ідею, що формування цих навичок потрібно розпочинати задовго до навчання в університеті і постійно вдосконалювати.

У статті розглянуто три групи м'яких навичок, включаючи особистісні риси, комунікативні й соціальні навички та управлінські таланти, а також описано різні можливості опанування ними. Зокрема, автор пропонує впровадження активних та інтерактивних методів у навчання студентів комп'ютерних спеціальностей іноземної мови, а саме: групових дискусій, кейсів, проектною роботи, рольових та симуляційних ігор, інтерактивних відео TED Talks, що можуть сприяти формуванню м'яких навичок у студентів.

Автор наводить результати опитування, проведеного серед студентів старших курсів факультету комп'ютерних наук з метою аналізу їх обізнаності щодо ролі м'яких навичок. Найважливішими було визначено самоконтроль, мотивацію та самодисципліну, управління часом, командну роботу та співпрацю, критичне мислення, міжособистісне спілкування та вміння вирішувати різноманітні проблеми. Студенти виявили бажання вдосконалювати компетенції, яких бракує, задля успішної кар'єри.

Ключові слова: м'які (гнучкі) навички, розвиток м'яких навичок, кар'єра, зайнятість, активні та інтерактивні методи навчання.

Problem statement. Today's job market has become more complex, challenging and competitive, especially if we take into consideration how swiftly AI, automation and technology started to reshape it. Because of this, recruitment requirements go far beyond technical talents and expert knowledge, which, of course, are important but not crucial in selecting job applicants. Recruiters seek those who are able to come up with unique, breakthrough ideas, who can handle unexpected challenges and think on their feet, who excel in leadership, teamwork, and problem-solving skills, etc.

The research by Wonderlic company estimated that 93% of employers consider soft skills to be a determining factor while choosing a candidate, while the survey conducted by LinkedIn highlighted that 57% of employers place emphasis on soft talents to the same extent as on the job-specific ones. In 2023, their studies revealed that occupations requiring soft competencies will grow at 2,5 times the rate of jobs in other fields and account for a significant portion of all jobs by 2030. The research results presented by Adecco company showed that 44% of executives believed a lack of soft competencies was causing the biggest gap in proficiency in the workplace (A. Belcak, 2023).

There is a famous saying that hard skills will take you to an interview, while soft skills will help you get the job and retain it. Interpersonal relationships, work-life balance, job performance and career prospects highly depend on the level soft skills are developed at, enabling a candidate to become more competitive and manage challenging high-pressure situations in a better way. The higher a person climbs up a career ladder, the smaller the weight of hard skills is and the more significant the soft ones become (N. Dlugunovych, 2014).

Research analysis. The practice of differentiating and assessing «soft» and «hard» skills is relatively new for Ukraine. However, these two concepts were first introduced in the mid-60s to improve the level of military training of the US soldiers. Later on, they were incorporated into other spheres of life, besides the military one.

Hard skills are known as technical skills or job-related competencies that people utilize to complete a certain type of task or activity. They are relatively

easy to measure and can be acquired through schooling, training or real-world experiences, thus can be validated with some form of qualification (M. Carvello, 2021). Moreover, they must be perfected over time as they can become irrelevant and outdated (K. Koval, 2015, N. Dlugunovych, 2014).

Soft skills, on the contrary, refer to a broader set of habits, behavior patterns, attitudes, and qualities that are developed throughout the entire life and enable people to effectively navigate their environment, collaborate with others, perform well and achieve their goals (L. Lippman et al., 2015). In various scientific sources, they are defined differently as «people skills» or «interpersonal skills», though Marcel M. Robles believes it's the combination of both (Marcel M. Robles, 2012). They are also referred to as «21st-century skills», emphasizing their importance for achieving success in today's workplace.

Theoretical aspects and classifications of soft skills are reflected in the scientific works of P. Klaus, L. Lippman, Marcel M. Robles, A. Anju, K. Koval, etc. Realizing a significant role and an increasing interest in soft skills at the labor market, many scientists support the idea of integrating them into the university curriculum. The development of soft skills is seen as a key component of training students of different specialties at higher educational establishments, which is thoroughly analyzed in the works of N. Dlugunovych (IT sphere), M. Morozova (economic specialties), N. Chuprinova, I. Sevruk, Yu. Sokolovska (NGU officers training), M. Chykalova, O. Sydorenko, L. Korzh-Usenko (tourism), O. Khomenko (law enforcement officers training) etc.

The **aim of this research** is to summarize basic peculiarities and the significance of soft skills for life and career and to analyze the ways they can be taught to computer science students in the process of a foreign language acquisition, at Petro Mohyla Black Sea National University, in particular.

The main material presentation. Carvello Mara says that for graduates, to get positive outcomes, it's vital to build a robust skill set, blending both hard and soft skills (M. Carvello, 2021). Thus, the educational curriculum for undergraduates majoring in Computer sciences, Software engineering, and Computer engineering implies that students have

Table 1

Classification of soft skills

| | |
|------------------------------------|---|
| 1) personal attributes | <ul style="list-style-type: none"> • creative thinking • analytical and critical thinking • decision-making • teachability and life-long learning • time management • self-control, self-regulation and self-discipline • motivation and initiative • intuition • multi-tasking • mental agility • work ethics • empathy • optimism and positive thinking • adaptability • flexibility • entrepreneurial mindset • stress-resistance |
| 2) communication and social skills | <ul style="list-style-type: none"> • interpersonal communication • collaboration and team work • rapport building • advising • negotiation and persuasive skills • giving and receiving feedback • non-verbal communication • considering cultural and cross-cultural peculiarities • following phone/email/network etiquette • public speaking • presentation skills |
| 3) managerial talents | <ul style="list-style-type: none"> • leadership qualities • creating a team, regulating its work • efficient sharing of roles and responsibilities • facilitation and coaching • problem-solving • choosing various modes of behavior • stress and conflict management • credibility • foresight and risk avoidance |

to obtain certain hard or technical skills, including the knowledge of several programming languages, coding, website and applications development, interface design, frameworks, HTML and CSS, etc. It also foresees training general soft skills like the ability to think abstractly and critically; to search, analyze and systematize information; to work autonomously and in teams; to act consciously, taking into account the principles of sustainable development; to generate fresh and creative ideas, and the ability to implement the acquired knowledge in practical situations. The latter skills are supposed to be developed within all disciplines of the curriculum, especially of the humanitarian cycle.

Having analyzed the scientific literature dedicated to soft skills, we can summarize their basic peculiarities as the following:

- there is a huge variety of soft skills;
- they complement hard skills;
- they are more difficult to acquire and learn individually;
- they should start to be developed long before the university;
- they may be transferable to any type of job,
- their application is not confined to one field of knowledge or professional activity, but still, may bring positive outcomes;
- they are nebulous, thus difficult to showcase, measure or assess.

Despite the fact that soft skills are nonspecific and more transferable, no universal approach to their classification has been offered so far. The analysis of scientific literature allows us to differentiate three main groups:

- *personal attributes* characterize a person's ability to learn and dynamically develop, manage emotions and regulate behavior, direct attention, etc.;
- *communication and social skills* define a person's ability to interact and collaborate with others;
- *managerial talents* help to direct people, deal with problematic issues and conflicts, foresee possible outcomes.

In Table 1, the soft skills belonging to each group are specified:

Nowadays businesses seek to employ efficient workers with soft skills of all kinds who can easily collaborate with colleagues, create new products and motivate others, possess positive thinking, be resistant to stresses and oriented to success, be adaptable and flexible. The higher a job position they have, the more communication, managerial and strategic skills they are expected to demonstrate (N. Dlugunovych, 2014).

Luckily, there are plenty of possibilities for soft skills development. A lot of educational literature and video courses are available today. Many leading companies offer various internship programs or training courses, seminars, and workshops aimed at raising team spirit, personal growth, developing leadership qualities, conflict and stress management, etc. However, some experts emphasize the lack of sufficient attention to them, unlike to hard skills, in the university curriculum (K. Koval, 2015, N. Chuprinova, I. Sevruc, Yu. Sokolovska, 2021).

In our research, we focus our attention on how students' soft skills can be developed and mastered at university, in the process of a foreign language acquisition, in particular. This can be mainly achieved by implementing active and interactive training

methods like group discussions, case studies, role-playing and simulation games, project work, etc. which foresee students' active participation in the cognitive activities, while performing various creative tasks and solving problematic issues, simulating real-life situations, collaborating and exchanging opinions, searching for new information, giving and getting feedback. Moreover, the interactive teaching covers not only the cognitive, but also the emotional and motivational spheres of a person. In other words, the advantages of interactive methods are obvious.

At foreign language classes, *group discussions* (for example, of the topics «How green is IT?» or «Is there a limit to the technological progress?» or «Is AI a threat or an opportunity for you?») are aimed at ensuring communication in a foreign language through opinion-sharing and rapport among students. They are taught so-called respectful communication, demonstrating tolerance and respect to the other person's opinion, avoiding criticism and aggressive behavior. Even in the conditions of distance education, life discussions can be organized via video-conferencing and turn into dynamic and immersive learning environments.

The case-method is an example of problem-based learning. It allows gaining skills in critical thinking and analysis, communication and creative problem-solving either autonomously or in a team, dealing with various cases in the form of texts, documents, situations, and stories which contain problems or dilemmas that must be solved. Students do a lot of active listening and talking, while analyzing cases from different perspectives. Harvard Business School experts claim these dynamic engaging case discussions can prepare students to be in leadership positions as they have to find real solutions to real world problems.

Role-playing allows students to play roles modelling or simulating real-life situations or scenarios. Due to this activity (for example, when students are asked to simulate a job interview), the following communication skills are activated as the ability to conduct a dialogue and be convincing, ask clarifying questions, give immediate responses and make decisions.

The project method is an example of a student-centric approach which emphasizes their autonomous work, starting from the selection of a topic for their project to its planning and execution, which implies much search work and data collection, analysis and investigation, creativity and self-management talents. If a group of students are involved in the project, this requires activating collaboration and teamwork skills. Presentation skills and the art of speaking are

also mastered with each project. It goes far beyond making a PowerPoint presentation, it implies the ability to express thoughts and ideas in a clear and compelling manner to get a message across.

Integrating interactive TED Talks videos in a foreign language training is highly recommended by many scholars (I. Humeniuk, H. Korniyush, N. Stetsenko, K. Baisha etc.) as the ones which can help efficiently prepare students for their communication in the academic and professional environment. A lot of TED Talks videos are devoted to teaching soft skills, thus may be used both for individual work and classroom discussion:

- Brian Christian «How to manage your time more effectively», «The philosophy of time management»;
- Ray O'Laughlin «Personal responsibility»;
- Amy Edmondson «How to turn a group of strangers into a team»;
- Balder Onarheim «3 tools to be more creative»;
- William Ury «The walk from «no» to «yes» (TED: ideas worth spreading).

It must be noted that regardless of the activities and methods selected by a teacher, it is crucial to create a favorable learning environment in which students will feel comfortable and interested in participating in an activity and learning from each other.

To analyze students' soft skills awareness and stimulate soft skills development, a survey was conducted among the senior students of Computer science department in which they were asked to differentiate hard and soft skills and then, based on their life/job expectations or current/previous job experience, select top 10 soft skills (out of 30) crucial for the efficient work in IT sphere. Using a 5-point scale, they were supposed to self-evaluate an approximate level of the skills they possess. Moreover, the received results were discussed at our foreign language classes, within the topic «Job Opportunities. Employment trends», and the students were given an opportunity to exchange their opinions on the given issue.

The research results showed that all the students value the significance of soft skills for life and career. They confessed it was difficult to make a choice in favor of ten. Still, the most prevalent ones which they marked as very and extremely important for career success included: self-management (self-control, motivation and self-discipline), time management, team work and collaboration, critical thinking, multi-tasking, interpersonal communication and problem-solving skills. 75% of the students also included decision-making, positive work attitude, willingness to learn and develop, creativity and leadership qualities

into their list, while 66% believe negotiating, public speaking and presentation skills are quite important, especially if it concerns managerial positions.

The self-assessment revealed most of the students (81%) lack self-control, self-discipline, time management and motivation, explaining it by having distance education for a long period of time as a result of pandemics and war. Those students who have some work experience noted an increase in the level of the skills they chose. 62% showed a great willingness to improve lacking soft competencies for the purpose of having better employment chances and career performance in general, even without getting attached to IT sphere.

Conclusion. Having considered basic peculiarities and the significance of soft skills, we can conclude that they are no less important than the hard ones

and may be truly called ‘the advantage of the future’. With the technological progress, AI and automation, hard skills may quickly become obsolete, while the social and emotional abilities will always be unique.

One of the objectives of higher education is to motivate and foster the development of students’ soft skills, which in combination with hard skills, can become crucial for their life and career. The more skills they acquire, the more successful they will be in their job performance and later on, career advancement. We believe soft skills should start to be developed long before the university and be constantly improved. Today, there are lots of possibilities for achieving this goal. At foreign language classes, it is recommended to implement active and interactive training methods to create a favorable learning environment and enhance students’ soft skills development.

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