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The Role and Significance of the Concepts of Hard Skill and Soft Skill in Teaching It and Programming Languages

M.M.Ashurova,
PhD student of GulSU
M.U. Ashurov,
Senior lecturer of TSPU named after Nizami

Annotatsiya: This article about hard skill and soft skill which are integral concepts during the lesson and work places. Both of them give to students to improve logical thinking and communication.

Key words: hard skill,soft skill, sql, algorithms, data warehouse, technical skill

Today in advanced age, the field of education cannot be imagined without computers and the Internet. In this century, not only education and other fields are closely related to computer technology and the Internet. In order to improve the quality of education, computer science is taught in depth in all higher education institutions. In the following article, the students of Informatics and its teaching methods received information about the concepts of Soft Skill and Hard Skill on the Internet, albeit briefly. This article will fully reveal the differences and essences between these two concepts. These concepts are more familiar to programmers and information technology workers because they may have already developed the ability to work with the programs and other skills listed below, because they use these programs a lot in their daily work. While programmers turn more to programming languages, other industries use more applications and Internet search engines. For example, secretaries use the programs of the Microsoft Office suite of programs, while those in the field of economics often refer to database processing programs. The concept of Soft Skill is not related to technical tools and only the personal qualities of the user are understood (communication with people, finding solutions to difficult situations...) Hard Skill is a concept related to programming languages and other practical programs. In workplaces, this refers to technical knowledge or knowledge acquired through experience. It is also known as Technical skills. Both of these concepts have several application areas. In 2022, according to the results of the survey of the **National Association of Colleges and Employers (NACE)**, 64.9% of enterprises also reported a high demand for employees with hard skills. Soft skill includes the qualities needed during this job. Both of these skills are very important for future computer science teachers because they can communicate with students during class and directly refer to computer programs.

Soft Skill
These given personal qualities are considered important for those who carry out their activities in the field of education, they encourage students to get good knowledge, be active and work in a group. Approaching given assignments based on accuracy and creative ideas will increase interest in learning and science. It is natural to develop such abilities in non-traditional classes.

Hard Skill
Hard skills are teachable abilities or skill sets that are easily measurable. We define hard skills as the technical abilities that fit the job. Normally, you can acquire hard skills in the classroom, in an online course, through books and other materials, or on the job.

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SOFT SKILL	HARD SKILL
Communication culture	Technical programs
Work in a team	Analytical programs
Solving problems	Computer programs
Agreeableness	Marketing programs
Hotness	Programs working with information
Flexibility	Business and management programs
Feeling responsible	Network security
Time management	Other programs

Working with computer programs not only determines the teacher's experience during work, but is an important part of teaching informatics and programming languages.

Let's briefly touch on modern computer programs that students and teachers of higher education institutions should know.

- Microsoft Office software package
- Google Suite programs
- Programs based on spreadsheets
- Social network
- Text editors
- Graphics
- Email
- Antivirus programs
- Zoom
- Web browsers
- Programs working with PDF files
- Programming languages (Python, JavaScript, etc.)

Algorithms and programming languages are at the same time database subjects as the subjects considered the most necessary and the most difficult by students in the process of teaching programming languages and computer science. Instead of data, many programmers think that Data Warehouse and Algorithms are something that should be taught in school, which they don't use in real life at all, but they are surprised when they come across Data Warehouse and Algorithms in an interview. There are reasons why several companies are interested in DW knowledge of employees, and why programmers are also interested in it. Companies such as Meta, Amazon, Google, and Microsoft also take a long time to write code. Most of the programmers' time is spent on choosing the right approach to the project, their decisions are focused on the impact on the real situation of the company and profit, and during the question-and-answer process, emphasis is placed on the indicator of DW. Even outside of Silicon Valley, these questions are important because they show the fundamentals and problem-solving skills of developers. The importance of DW is still used in our daily activities and workplaces. At the same time, the programmer gives instructions to the computer to solve the problem through an algorithm, which is more like the process of applying a recipe to cooking a meal. These instructions follow step-by-step tasks and include searching and sorting information. In addition to this, along with startup

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projects, 5 powerful companies such as FAANG are always looking for programmers who can work with DW and have logical thinking.

Simple concept expected of any programmer is to be intimately familiar with the database. The database is the fuel for the company's operations, and every aspect of the project is focused on increasing its revenue. Many programming languages are used to work with the database, but the most used is SQL (Structured Query Language) and it is pronounced as a sequel. Although SQL was perfected in the 1980s, it is still used as the standard programming language and is important to modern database programmers.

In conclusion, above, hard skills and soft skills are considered important not only for future informatics teachers, but also for representatives of other fields. Informatics teachers use these skills and competencies during education, and for students, this creates a foundation for becoming experienced specialists in other fields in the future.

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