**CZU: 373.09(477)**
**DOI: 10.46727/c.v2.07-08-06-2025.p396-402**

# TRANSFORMATIONAL CHANGES OF THE NEW UKRAINIAN SCHOOL: PRESENT AND FUTURE

**Volodymyr YATSENKO,**
*PhD, Senior Researcher at the Training Department Geography and Economics, Senior Researcher,*
*Institute of Pedagogy of the National Academy of Pedagogical Sciences of Ukraine, Kyiv, Ukraine,*
*ORCID: 0000-0002-7948-2983*
*e-mail: iatsenko_v@ukr.net*

**Abstract.** The transformation of the educational system of Ukraine through the implementation of the Concept of the New Ukrainian School poses new challenges to the methodology of teaching natural sciences. Chief among them is the change in methodological and methodological approaches to teaching. The question of what and how to change in career guidance work with pupils of general secondary education institutions is considered, this specificity of changes will belong primarily to the national (regional) labor market. The most popular skills of future specialists are described, such as critical thinking, the ability to analyze and find a complex solution to problems, the ability to solve problems, self-organization skills, the ability to actively learn, stress resistance and flexibility. It should be remembered that we develop these skills not only in students, but also in their teachers, so we must take this into account in our individual professional development plans.

Studying and taking into account the results of international comparative studies (on the example of PISA-2018, where the level of formation of natural science literacy was determined, is one of the stages of this study. equality, peace and sustainable development. They are interconnected with the problem of the state of young people in the world.

Therefore, the entire system of scientific and methodological support of the educational process is aimed at forming the image of an ideal graduate of the New Ukrainian School as a holistic personality, comprehensively developed, capable of critical thinking. This is a patriot with an active position, who acts in accordance with moral and ethical principles and is able to make responsible decisions, respects

dignity and human rights. He is an innovator who is able to change the world around him, develop the economy according to the principles of sustainable development, compete in the labor market, and learn throughout life.

**Keywords:** New Ukrainian School, cross-cutting skills, advanced training, natural science literacy, PISA, sustainable development, graduate.

Reforming the educational system of Ukraine through the implementation of the Concept of the New Ukrainian School (NUS) [1] poses new challenges to the methodology of teaching natural sciences. One of them is the question, **how should the career guidance work of the NUS be changed?** The World Economic Forum's 2020 report The Future of Jobs [2, 22] provides **a forecast by economists for 2025**, which predicts that labor automation and technology will lead to the disappearance of 85 million jobs, but 97 million new ones will be created (let's continue to be calm!). On these **changes in labor** markets we must also take into account, because of those professions of the near future and their systematic training and implementation begins with general secondary education institutions ( HHSOs).Profession? These are specialists in data analysis, AI and machine learning, digital marketing and strategy, automation, and others. On career guidance forms of work, we can allocate time to *discuss* which professions will gradually disappear from the labor market – data entry specialists, secretaries, accountants, factory workers, administrators, etc.

Thus, by 2025, it is necessary to transform the methodology of teaching natural subjects, that is, to change approaches to the formation of a set of skills that will be needed by future specialists.

The most popular **skills of future specialists** in the future will be: *critical thinking, the ability to analyze and find a complex solution to problems, the ability to solve problems, self-organization skills, the ability to actively learn, stress resistance and flexibility.*

In the next five years, 40% of employees of various professions, including teachers, will have to undergo **retraining**, and more than 70% of employees will have to acquire new skills or improve those they have (Fig. 1).

The second important task-problem is the inclusion of Ukraine in the European Scientific (or Research) Space. The European Research Area (ERA) is a system of research programs for the integration of scientific resources in the European Union (EU). For Ukrainian educators, the question arises of studying and taking into

account **the results of international comparative studies (on the example of PISA-2018 [3, 7]).**

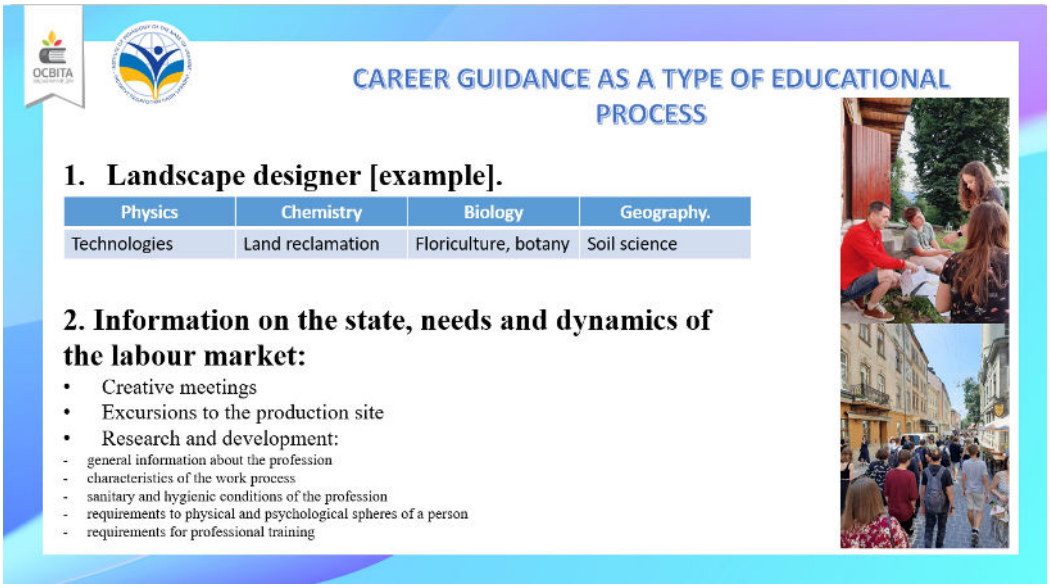



**Fig. 1.** Integration content in the content of the professional choice of the future applicant

In 2018, for the first time, Ukraine participated in the international study on the quality of education PISA. The participants of the study are 15-year-old respondents (i.e. students of the 9th grade). Determining the level of formation of natural science literacy is one of the stages of this study. **Natural science literacy** in this context is determined by three components:

- explanation of phenomena scientifically;
- evaluation and development of scientific research;
- scientific interpretation of data and evidence.

And it assumes the presence of three types of knowledge:

- *knowledge of the content of science*;
- *procedural knowledge* – knowledge of the procedures used by scientists to establish scientific knowledge;
- *epistemic knowledge* – understanding the role of special components of science and identifying characteristics important for the process of building knowledge in science.

Epistemic knowledge includes understanding, functions of questions, observations, theories, hypotheses, models and arguments in science, recognition of various forms of scientific research.

Therefore, according to the international community, the formation and development of relevant competencies are mandatory. That is why it is provided for by the State Standard of Basic Secondary Education [4]. For example, a globe, a terrain layout (**geography**), sliding of a metal or wooden object on any surface (**physics**), a chemical process reproduced in a test tube (**chemistry**), building a graph of the spread of the virus or ecological pyramids, calculations of the practical yield of the reaction product (**mathematics**), digital modeling (3D models of atoms or molecules, especially DNA molecules) are examples of mathematical, real computer models that are still used today in science classes (**computer science**).

Ukraine scored 469 points and reached the third level. What questions can we ask ourselves? *What did we teach the students?* It is to make decisions consistently; to interpret data; to work with different sources. *What do we need to teach students?* To give more abstract subject knowledge; to justify the research plan; to teach how to conduct an experiment; to continue interpreting data; to draw appropriate conclusions. *Our immediate dream?* That Ukraine will score >599 points and reach level IV out of VI potentially possible. And perhaps this will happen in **2022**, these are the plans for today, but given the current challenges (martial law has not yet ended at the time of writing this material), they will be postponed once again.

Our authorship prepared a scientific article on the preparation process for the PISA-2025 natural science study [5], which is expected to be carried out on time. What problems of scientific and methodological content were identified? During the school year, teachers do not have a well-established system for using such tasks during the lesson (I). At the end of the school year, such tasks are given (II), as a rule, without evaluating the work performed in the traditional system of assessing the educational achievements of students. Secondly, for students of the 11th grade, tasks are already given in the format of the National Multi-Subject Test (NMT) (III) according to the materials compiled by teachers or in the test form according to the relevant materials. Finally, the heads of methodological associations prepare a general analysis of the results for discussion at the pedagogical council (IV), etc. [ibid., 222].

**The search for new ways of learning (educational changes), or when will the ideal future come?**

There are several important priority tasks in education that we can highlight for **the near future (2025-2030)** – *gender equality, peace and sustainable*

*development*. They are interconnected with *the problem of the state of young people in the world*. The world must achieve these tasks and set other, no less important **in the field of education**, namely *access to education, equality, quality of education and opportunities to receive it throughout life*. And here the reform of the educational system of Ukraine in the format of the NUS is really timely. *financial crisis in education*, to carry out the educational reform to the end (we mean that there is strength and desire to implement it by 2027 inclusive and beyond), because the effectiveness **of training teachers of natural subjects** in higher education institutions (HEIs) and institutes of advanced training, both public and private institutions and organizations, and this activity attracts more and more attention of the community. It would be appropriate to familiarize yourself with UNESCO reports on this topic, for example, the report on **the creative economy** "Expanding the Paths of Local Development" [6], which defends the idea of a powerful driving force of culture in socio-economic development, the UNESCO report on social sciences, which emphasizes the irreplaceable contribution of the social sciences to solving the problem of climate change, etc. (Table 1).

**Table 1.** Finding new ways to learn (educational changes) [adaptation from source 7]

| **Curricula and subjects have not changed for 150 years!** |
|---|
| - study of computer science; |
| - team or group form of work; |
| - development of creativity; |
| - learning through play (development of critical thinking); |
| - supporting students' initiative outside the curricula... |
| *The Learning Revolution (Davos 2020):*<br>**"To teach, retrain and teach anew"** |

It should be remembered that according to expert forecasts, in the near future, the skills most in demand in the labor market will be:

- to learn throughout life;
- think critically;
- set goals and achieve them;

- work in a team;
- communicate in a multicultural environment.

The listed skills are aimed primarily at the fact that students learn to use them to solve life problems. And this is also a skill! What does a graduate of NUS look like today? See. Fig. 2.




**Fig. 2.** Ideal graduate of the New Ukrainian School [source 1, 6]

**The ideal NUS graduate** is a holistic personality, comprehensively developed, capable of critical thinking. He is a patriot with an active position, who acts in accordance with moral and ethical principles and is able to make responsible decisions, respects dignity and human rights.

Yes, it's really great that we can see today what our graduate should look like, let's call him *an ideal graduate*. He/she thinks critically, actively acts and learns throughout life. And this is great! It is no coincidence that psychologists and

pedagogical workers are constantly talking about **Generation Y**, or "millennial children", who were born between 1990 and 2000. who were born after 2000 years, but their research is just beginning.

## BIBLIOGRAPHY

1. New Ukrainian School: Conceptual Principles of Secondary School Reform / Collegium of the Ministry of Education and Science of Ukraine dated 27.10.2016; The group is arranged. : Hrynevych L. et al.; Zag. Ed. M. Grishchenko. K., 2016. 40 c. https://mon.gov.ua/storage/app/media/zagalna%20serednya/nova-ukrainska-shkola-compressed.pdf, last accessed 2025/04/13.
2. World Economic Forum (2020). The Future of Jobs Report 2020. https://www.weforum.org/reports/the-future-of-jobs-report-2020, last accessed 2025/04/14.
3. PISA: natural science literacy. T. S. Vakulenko, S. V. Lomakovich, V. M. Tereshchenko, S. A. Novikova; transl. K. E. Shumova. Kyiv: UCEQAO Publ., 2018. 119 p., https://nus.org.ua/wp-content/uploads/2018/02/Science_PISA_UKR.pdf, last accessed 2025/03/19.
4. State Standard of Basic Secondary Education / Resolution of the Cabinet of Ministers of Ukraine dated September 30, 2020 № 898, https://zakon.rada.gov.ua/laws/show/898-2020-%D0%BF#Text, last accessed 2020/11/18.
5. YATSENKO V.S. Process of preparation for natural science research PISA-2025. Ukrainian Pedagogical Journal, (3), 216–225. https://doi.org/10.32405/2411-1317-2024-3-216-225 URL. : https://uej.undip.org.ua/index.php/journal/article/view/798/933, last accessed 2025/04/14.
6. Creative economy report, 2013, special edition: widening local development pathways. UNESCO, United Nations Development Programme. ISBN: 978-92-3-001211-3. 190 p. https://unesdoc.unesco.org/ark:/48223/pf0000224698, last accessed 2025/04/14.
7. The Future of Jobs. Report 2020. World Economic Forum, 2020. 163 p. https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf, last accessed 2025/04/10.