The Problem Field of Professional (Vocational) Education: Innovations and Ways to Improve

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ABSTRACT

The need for systemic changes in vocational education is considered since the sphere of higher education is in dire need of professionals capable of developing their students, mastering new educational technologies and new pedagogical and administrative tools. The authors reviewed the main methodological approaches and substantiated the use of the synergetic approach to finding ways to improve vocational education. As such a path, the authors proposed a synergy of a personal learning environment along with the correct motivation of students. The authors clearly showed the mechanism of the personal learning environment and the place of each of its participants and proposed a possible variant of the task for the student in this environment and the criteria for its assessment.

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1. Introduction

Education is the basis of intellectual, spiritual, physical and cultural development of the individual, its successful socialization, economic well-being, the key to the development of a society united by shared values and culture, and the state.

The purpose of education is the comprehensive development of man as a person and the highest value of society, its talents, intellectual, creative and physical abilities, the formation of values and competencies necessary for successful self-realization, education of responsible citizens who can make conscious social choices and society, enriching on this basis the intellectual, economic, creative, cultural potential of the Ukrainian people, raising the educational level of citizens to ensure the sustainable development of Ukraine and its European choice [1].

Today education, whether secondary, higher or additional, has its task and purpose. Still, at the same time, they all pursue the main mission – the successful socialization of a person, first of all, through his professional activities.

Currently, there is an active process of modernization of general and vocational education, which is mainly implemented through a gradual change in the content, technology and management of educational activities.

Speaking about the modern space of life, we can note the high level of literacy in society, the freedom to choose the labour market, which fully ensures the effectiveness of self-determination in professional activity and makes it possible for a person to self-actualize.

At the same time, an analytical review of studies related to the problem of vocational training [2-5] gives grounds to actualize the following problems: the effectiveness of "full-fledged education", professional and business culture in educational and professional activities, low interest in the assimilation of professionally oriented knowledge and skills stage of university education.

The learning process needs special attention, taking into account the pace of development of information and communication technologies that change the educational space and contribute to the development of a person with a different type of thinking, a new culture of interaction, unique needs [6-9].

It is essential to identify not only the reasons for the discrepancy between the professional mentality and the dynamics of the development of the culture of the new information field, but also the role of new types of literacy that have changed holistic thinking, the habitual attitude of a person to the world of knowledge, to determine the nature of the changes that affect the process of vocational education, and their specifics.

2. Theoretical and methodological basis.

According to the Law of Ukraine "On Education" [1], education has the following structure (Fig. 1).

Professional (vocational) education is a process and the result of professional formation and development of an individual, accompanied by the acquisition of established knowledge, abilities, skills and pedagogical competencies in specific specialties and professions.

Professional (vocational) education is obtained based on primary or complete general secondary education. Acquisition of professional (vocational) education based on basic secondary education is carried out with the simultaneous acquisition of specialized secondary education and obtaining the relevant document on complete general secondary education.

The following methodological approaches are of interest for professional education:

- logical-evolutionary,
- contextual competence,
- personal,
- network (multidimensional),
- synergistic [10-11].

Let's consider them in more detail (Table 1).

Table 1. Approaches to the study of professional education

Approach	Main idea	Content
Logical-evolutionary	Pedagogical processes and phenomena are considered in their development, formation.	The approach is based on the position that the essence of a mental phenomenon can be understood only by studying its origin. For example, in order to reveal the essence of developmental education, it is necessary to consider the formation of models of developmental education in the context of the socio-economic situation.
Contextual competence	The construction of vocational education is focused on developing non-standard forms and models of real professional activity.	Education is focused not only on the development of knowledge but also on the formation of a project culture, which implies the use of productive technologies for training specialists (reflective learning, the case study, project training, the method of guiding texts, etc.), which maximally simulate real professional activities.

Personal	The main driving force of a developed professional is the personality itself, its need for self-actualization of its personal and professional potential.	Personality orientation means that the content of education, organizational forms, teaching technologies are subordinated to the satisfaction of the student's need to be a person. The semantic factor of education is the value-semantic orientation of the individual: her motives, interests, attitudes, values. The construction of the educational process is focused on the development and self-development of socially and professionally essential qualities and social and moral forms of behaviour of students. The leading motives of these processes are the prospects for professional growth.
Networked (multidimensional)	This approach is considered an alternative to the systemic one, characterized by the structuring of psychological and pedagogical phenomena, processes, and phenomena on various logical grounds. Located on homogeneous rows, they are combined "haphazardly" on a value-semantic basis.	The tool for the implementation of this approach is a multidimensional display of multilevel knowledge by constructing logical-semantic models. Significant importance is attached to semantic connections and relationships. Multidimensional logical-semantic models represent many heterogeneous elements of knowledge in a collapsed form, united by coordinates into semantic groups. Some of the elements perform an illustrative function, but all together, they form a semantically related system that gives an idea of the interdisciplinary nature of the problem under study.
Synergistic	It is characterized by the recognition of the plurality of development paths, the priority of individuality, the transition from objects to situations, the rejection of the rigid determination of the educational process, the recognition of the ambiguity of the results of education.	This approach is used in psychology when studying open (exchanging matter, energy and information), nonlinear (multivariate and irreversible in terms of development), self-developing (changing under the influence of internal contradictions, factors and conditions) and self-organizing (spontaneously ordering, moving from chaos to order) systems.

All of these approaches have their interpretation of "professional development" (Table 2).

We believe that the most promising is the synergistic method. You should also consider what changes in society are causing the crisis in education:

1. Information boom and informatization of society:
 - a) an overabundance of information;
 - b) rapid obsolescence of information;
 - c) inconsistency of the education system with modern requirements.
2. Development and change of technologies in the industry, structural changes in the economy.
3. The critical position of human resources in the country's economy.

4. The gap between theoretical training and practical implementation.
5. The massive nature of higher education
6. Commercialization of education.
7. Demand for a higher education diploma.
8. The growing lack of spirituality and immorality in society

Table 2. Interpretation of the concept of "professional development" by the main methodological approaches

Methodological approach	The basic concept of "professional development"
Logical-evolutionary	Professional development must be considered in the logic of personality formation. The trajectory of professional development is due to the action of multidirectional factors.
Contextual competence	The orientation of education not only to the development of knowledge but also to the formation of a project culture implies the use of productive technologies for training specialists: reflective learning, teaching by the case study, project learning, the method of guiding texts, etc., which maximally simulate real professional activity.
Personal	The main driving force of professional development is the personality itself, its need for self-actualization of its personal and professional potential.
Networked (multidimensional)	Professional development is a multidimensional process that can be represented as a logical-semantic model. Its key elements are the stages of professional development, leading activities, continuing professional education, etc.
Synergistic	Professional development is a heterogeneous, nonlinear process. The trajectories of professional development are individual.

Main trends in modern education

1. Internationalization of education.
2. Humanization of education.
3. Democratization of education.
4. Integrity of education.
5. Informatization of education.
6. Mobility and variability of education.

All this testifies to the transition from the subject-object paradigm of teaching to the subject-subject one (Fig. 2).

Figure 2. Changing the paradigm of learning influenced by trends

It was found [3; 12-13] that students have better results if:

- They are well motivated,
- Are not anxious,
- Believe in their own strengths and abilities,
- Possess effective learning strategies (including goal setting, choice of strategies, self-control and self-assessment of the learning process).

We will pay special attention to the first indicator because we consider it is influencing 2 and 3.

Motivation is a person's interest, justification of his desires and aspirations [14-15]. This is a combination of intellectual, physiological and mental processes, which in specific situations predetermine how decisively a person acts and in which direction his energy is concentrated. Currently, this topic is quite relevant for both students and teachers; since there is a tendency for students to decrease their interest in learning. Although entering a university, a person strives to gain knowledge, skills and abilities, to learn how to use them in practice, which in the future will allow him to acquire professional education and, as a result, independence, self-development, self-knowledge, professional development, increasing social status, etc.

Researchers [16-17] have established a positive relationship between motivational orientations and student performance. Directions to the process and to the result turned out to be most closely related to academic performance, less closely to the orientation to "teacher's assessment". There is a weak relationship between "avoidance" orientation and academic performance. Also, studies [18-19] have found that satisfaction with learning depends on the degree of satisfaction of the need for achievement, i.e. "the desire of a person to improve the results of their activities". This need makes students concentrate more on their studies and at the same time increases their social activity and positively affects their health [20].

At present, science has not developed a unified approach to motivating human behaviour. The terminology has not been established, and the basic concepts have not been clearly formulated.

With regard to international experience, the proposals of international experts to achieve a new quality of vocational education are as follows:

- Expansion of educational areas
- Introduce teaching material of interest to students
- Introduce elective courses tailored to the needs and interests of learners
- Orientation of learning to problem-solving
- Individualization of training (building individual trajectories)
- Strengthening attention to capable learners and learners with problems
- Teaching in small groups
- Training of teachers of the next generation
- Teaching teachers how to identify the needs and interests of students

Thus, the study allows us to propose ways to improve vocational education.

3. Results: innovations and ways of improvement.

We believe that to solve the current problems of vocational education; it is necessary to introduce network education based on the principle of teaching and learning "equal to equal", namely the Personal Learning Environment (Fig. 3).

Figure 3. Concept of Personal Learning Environment (PLE)

Participants of the educational process carry out joint design and creation of common educational space, development of educational content.

Typical PLEs include learning blogs (e.g. Twitter), YouTube, RSS feeds and assumes a learner's readiness to:

- self-management of one's own learning;
- independent setting of educational goals;
- the student learns at his own pace;
- drawing up a personal training plan (learn only what you do not know);
- individual communication with the teacher;
- the possibility of training in one group with trainees of different levels of training during the study of a certain topic;
- passing practice or part of the educational process at the enterprise;
- constant checking of the acquired knowledge.

The personal educational environment of a student is a set of components of the educational process (content, forms, methods, means of educational activities and educational communication), obtained from the information and communication educational environment by adapting it following the goals, content and planned learning outcomes, needs and abilities of the student (Note that the student learns not only the educational content of the learning environment but also himself in the learning environment). The personal educational environment of a teacher – a set of components of the educational process (content, joint forms of educational activity, teaching methods and methods of using information and communication technologies, means of teaching and interaction with personal learning environments of students and personal environments of colleagues), through which the teacher implements the achievement of educational goals and professional activities, as well as serving as a means of personalizing his personality (in this case, personification means the teacher's knowledge of himself in social communications that control the educational process, positioning himself as a person in the surrounding community with the fixation of achievements and the primacy of discoveries in a specific area of scientific knowledge).

Thus, the task for the student contains a topic, a set of teaching material and questions for discussion and may look like this (Fig. 4).

Figure 4. An example of a task in Personal Learning Environment

Discussion 2 "Modern problems of education"

Date of the collective discussion: 10/03/2021 in GoogleClass

What to read?

- See guidelines

What to watch?

- Speech by the Minister of Education and Science of Ukraine Serhiy Shkarlet
<https://www.youtube.com/watch?v=VNFBVvT5vma>
- Webinar "Quality Assurance System of a Modern University" from the National Agency for Quality Assurance in Higher Education <https://www.youtube.com/watch?v=K1gfy0vQl3o>
- Serhiy Kvit: Seminar on education quality assurance systems
https://www.youtube.com/watch?v=fb_nC0fWK5Q
- Field meeting of the Verkhovna Rada of Ukraine Committee on Science and Education "On legislative support for the development of higher technical education in Ukraine"
<https://www.youtube.com/watch?v=hDCG3GFPHOA>

Prepare for discussion

- What influences the need to change educational methods?
- What is the economic efficiency of education?
- What are the possible sources of funding for education?
- What is the influence of the demographic factor on the quantitative evolution of education?
- What is the current state of education in Ukraine?
- What are the strategic political factors that create a new background for the development of education in the world?
- What changes in the education system do democratization and decentralization of state power

The teacher evaluates each such conversation according to the following criteria (Table 3).

Table 3. Criteria for assessing student participation in the discussion

Criterion	Score
The student is the organizer of discussions or helps the teacher in conducting it	10
The student asks questions, participate in polemics, reasonably proves his point of view	7
The student answers questions, makes judgments, but does not support them with the results of scientific research	5

Thus, we believe that a personal learning environment, together with the correct motivation of students, is one of the most effective ways, in our opinion, to improve professional education. However, we want to note that within the framework of the university, it is necessary to correct one of the main advantages of PLE, namely, long-term education. That is, it is necessary to find a middle ground between a comfortable pace for learning and postponing education for later. Another advantage that PLE gives is accustoming to a more independent learning process; the global trend leads to the fact that people will have to retrain 2-3 times in their careers.

4. Conclusions.

Based on the above, we can answer the main question: how to improve the results of professional (vocational) education and produce specialists who are truly competitive in the labour market:

Keeping the student interested is one of the main motivators of motivation. It is necessary to read lectures with interest and intonation, highlighting the main points, clear and vivid examples, and making certain conclusions on each topic. It is interesting for students with the active participation of

each in a practical lesson when they disassemble and solve problems at the blackboard, while they can find out incomprehensible moments right there from the teacher. Students' greatest interest is manifested in laboratory work, when they apply their theoretical knowledge in practice, collect diagrams, measure, and analyze the data obtained.

The incentive is not for evaluation but for the result. The student must be interested in the subject and open up opportunities for the practical use of knowledge.

Public rating of students. The electronic educational environment allows for the rating of students. Moreover, each student sees his rating and the rating of other students in this discipline. This will enable them to keep abreast of their learning process achievements and mobilize them before the midterm assessment and before the exam.

Creation of online courses. Modern students have a reasonably good command of the latest technologies. Therefore, if a teacher has his online course in the discipline taught, constantly updates it, carries out online correspondence with students, then the students will see the teacher's indifference and respond to him with interest in his subject.

Respectful attitude towards students.

All of the above applies to students, not only who deliberately chose a profession and university, but also for whom the parents decided or for other reasons; the main thing is the desire of the teachers.

References

1. Law of Ukraine "On education". <https://zakon.rada.gov.ua/laws/show/2145-19#Text>
2. Bondar, I., Gumenyuk, T., Udris-Borodavko, N., Penchuk, O. (2019). Entrepreneurship model for creation of designer competences in the process of professional training. *Journal of Entrepreneurship Education*, 22(6).
3. Gumennykova, T., Pankovets, V., Liapa, M., Miziuk, V., Gramatyk, N., Drahiiieva, L. (2020). Applying instructional design methods to improve the effectiveness of blended-learning. *International Journal of Management*, 11(5), pp. 31-42.
4. Kichuk, Y. (2017). The role of the university in the social and cultural creativity of the local society (Budzhak region). *Danubius*, 2017(35), pp. 313-320.
5. Lehrman, L. (1952). The Integration of Class and Field in Professional Education. *Social Casework*, 33(6), pp. 250-255. DOI: 10.1177/104438945203300605
6. Bashynska I., Baldzhy M., Ivanchenkova L., Skliar L., Nikoliuk O., Tkachuk G. (2019). Game Risk Management Methods for Investment Portfolio Optimization, *International Journal of Recent Technology and Engineering*, 8(2), pp. 3940-3943. DOI: 10.35940/ijrte.B1729.078219
7. Kichuk, Y., Kunchenko-Kharchenko, V., Hrushchynska, N., Zhukova, Y., Yarish, O. (2021). Intellectual capital of institutions of higher education in the knowledge economy. *Journal of Optimization in Industrial Engineering*, 14(1), pp. 183-190.
8. Sadchenko, O., Karpitskaya, M., Stasiukova, K., Popova, M., Tytykalo, V., Makoveieva, O. (2019). Linear programming as a data mining tool in assessing competitiveness in the face of uncertainty. *International Journal of Engineering and Advanced Technology*, 8(5), pp. 1475-1478.
9. Ustinova, N. (2020). Designing the educational space of the university. *Vestnik of Samara University History pedagogics philology*, 26(4), pp. 44-48. DOI: 10.18287/2542-0445-2020-26-4-44-48
10. Postnikova, E., Dudovich, D. (2016). Methodological approaches to higher professional education development. *Sovremennye Issledovaniya Sotsialnykh Problem*, DOI: 10.12731/2218-7405-2016-3-9

11. Tomiltcev, A., Maltsev, V. (2018). The problems of professional training assessment: Methodological approaches. *The Education and science journal*, 20(4), pp. 9-33. DOI: 10.17853/1994-5639-2018-4-9-33
12. Aripova, S. (2021). Students' Motivation in Autonomous Learning. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(4), pp. 1095-1098. DOI: 10.17762/turcomat.v12i4.620
13. Wadi, M., Veasuvalingam, B. (2011). Experience from Effective Learning Strategies Workshop. *Education in Medicine Journal*, 3(2), DOI: 10.5959/eimj.v3i2.84
14. Gans, C. (2007). Individuals' Interest in the Preservation of their Culture. *Law & Ethics of Human Rights*, 1(1), pp. 6-16. DOI: 10.2202/1938-2545.1001
15. Prabowo, T., Winarno, W., Sudarmawan, S. (2020). Analysis of Technology Acceptance Model Method To Predict A Person's Interest In The Acceptance of A Technology: A Literature Review. *Journal of informatics and telecommunication engineering*, 4(1), pp. 260-269. DOI: 10.31289/jite.v4i1.3986
16. Gayef, A., et al. (2018). Relationship Between Motivational Orientations, Metacognitive Adaptations and Academic Successes of Doctorate Students. *Yuksekogretim Dergisi*, 8(1), pp. 33-44. DOI: 10.2399/yod.17.017
17. Mahler, D., Großschedl, J., Harms, U. (2018). Does motivation matter? – The relationship between teachers' self-efficacy and enthusiasm and students' performance. *PLoS ONE*, 13(11), e0207252. DOI: 10.1371/journal.pone.0207252
18. Ansori, I., et al. (2019). The Correlation of Learning Dependence and Creativity with Learning Achievement in Social Science. *International Journal of Psychosocial Rehabilitation*, 23(4), pp. 1011-1018. DOI: 10.37200/IJPR/V23I4/PR190429
19. Folgueiras, P., Luna, E., Latorre, G. (2013). Service learning: Study of the degree of satisfaction of university students. *Revista de Educación (Madrid)*, 362, pp. 159-185. DOI: 10.4438/1988-592X-RE-2011-362-157
20. Woynarowska-Soldan, M., Yezhova, O., Sytnyk, O., Weziak-Bialowolska, D. (2018). Positive health behaviours Polish and Ukrainian medical students in the context of chronic diseases. *Przegl Epidemiol*, 72(4), pp. 509-523.