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ASPECTS OF DEVELOPING STUDENTS' INDIVIDUAL EDUCATIONAL TRAJECTORY

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Abstract: *The paper examines the organisational and methodological aspects of individualization behind professional higher education through the implementation of an individual learning trajectory of higher education candidates, taking into account the forced activation of distance learning. It analyses a survey of students on the individual learning trajectory as well as the organisational and methodological approaches to its implementation in one of the typical higher educational institutions of Ukraine. The authors discuss ways of using elements of different types of training in the process of realisation of the student's individual learning trajectory. The conducted analysis allowed them to pinpoint the main organisational and methodological directions of updating the individual educational trajectory. The theoretical basis of the study became the main principles and regulations of higher education organisation. The study used historical-logical and systemic approaches, general scientific and special methods, in particular: statistical (when analysing and interpreting data from higher education students on the individual trajectory of education); monographic and abstract-logical methods (when analysing the influence of individualisation of students' set of competences on the format of higher education); methods of observation and generalization (when discussing the use of elements of various forms of education in the implementation of the students' individual learning trajectory); methods of systemic analysis and synthesis. As a result, the directions for the development of the means of implementing the individual learning trajectory of higher education students in specialty 073 "Management" were formed.*

Keywords: individual learning trajectory, implementation, organisation, students, higher education.

INTRODUCTION

The pandemic, hostilities and the overwhelming insecurity in Ukraine significantly affected all areas of society, including education, which forcibly introduced means and methods of distance learning into the traditional framework of higher education. The observed changes in the academic environment have caused changes in the educational terminology. Experts stress that this new work mode can be called emergency remote teaching (Iglesias-Pradas et al., 2021) or emergency online teaching (Lorenza & Carter, 2021), reflecting the unprecedented speed of change the COVID-19 pandemic caused in the teaching community. The terms reflect both the urgent switch from traditional classes to an online blended mode and a sense of disruption among the faculty staff and the students (Lorenza & Carter, 2021).

All the above urged educational management to reconsider the issue of obtaining programme competences and corresponding programme learning outcomes by students of higher education at all of its levels (Karimov et al., 2021). Evidently, the changes caused by the pandemic in previous years increased the instructor's workload, which posed extra effort to present the learning content equal to the one developed in traditional classrooms (Iglesias-Pradas et al., 2021) as well as the necessity to introduce new ways of teaching (Domínguez-Lloria et al., 2021). However, the war hostilities made this workload even more dramatic.

Thus, the need for continuous monitoring and adjustment of curricula arises, triggered by the lack of a reference point for an ideal situation in which "a set of goals and tasks will be completely fulfilled during the theoretical time of study" as well as by the recognition that "the theoretical time of study is not the real time that should be spent by each individual student to achieve the ultimate learning outcomes. The real time will be different for different students" (Tuning Educational Structures, 2007). On the other hand, higher education seekers are now more aware that a university degree does not guarantee employment. This prompts universities to ensure that students have the best possible chance of becoming the first choice in the labour market, increasing their "value" for employers, thus meeting the actual needs of the latter" (Rashkevych, 2014). This strife raises the need for active participation of employers in the elaboration of relevant training programmes. Whereas the implementation of the chain "specific applicant – specific conditions – specific employer" calls for the need to personalize the educational trajectory within the curriculum in order to take into account the features of all three components where possible.

1. STUDY ON THE CANDIDATES' NEED FOR THE INDIVIDUALIZATION OF THE EDUCATIONAL TRAJECTORY

1.1. General characteristics of the respondents

To find out university candidates' opinion on the individual trajectory of education a sociological survey was conducted, comprising two blocks of questions, namely, those on educational trajectory and on professional priorities and expectations of a graduate. It was held among students of a typical higher educational institution

where both engineering and humanities courses are taught – Dniprovsky State Technical University (DSTU). The Sociological Laboratory of DSTU conducted an anonymous electronic questionnaire using a specially developed toolkit for students of first (bachelor) and second (master) cycle studies in different courses. Graphically, the general description of the respondents is presented in Figures 1–3.

Most of the interviewees are holders of the first (bachelor's) level of higher education and only 15.5% – of the second (master's) level (see Figure 1), which corresponds to the general ratio of holders by education level.

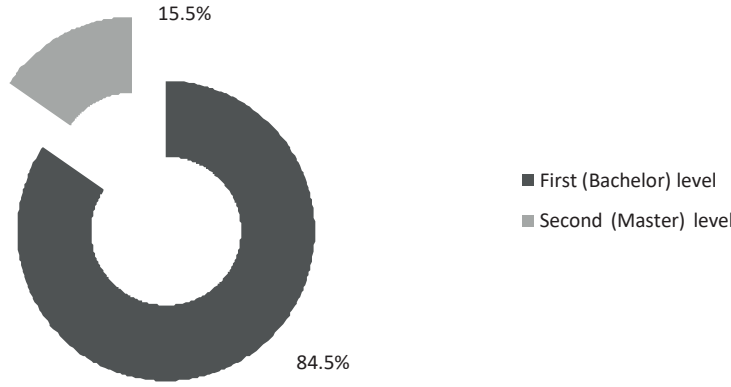


Figure 1. Educational level of respondents

Source: Own work based on http://www.dstu.dp.ua/uni/downloads/osv_traekt.pdf (accessed 14.05.2022)

The respondents participating in the survey come from humanities as well as from engineering fields. The distribution of respondents by field of study is shown in Figure 2.

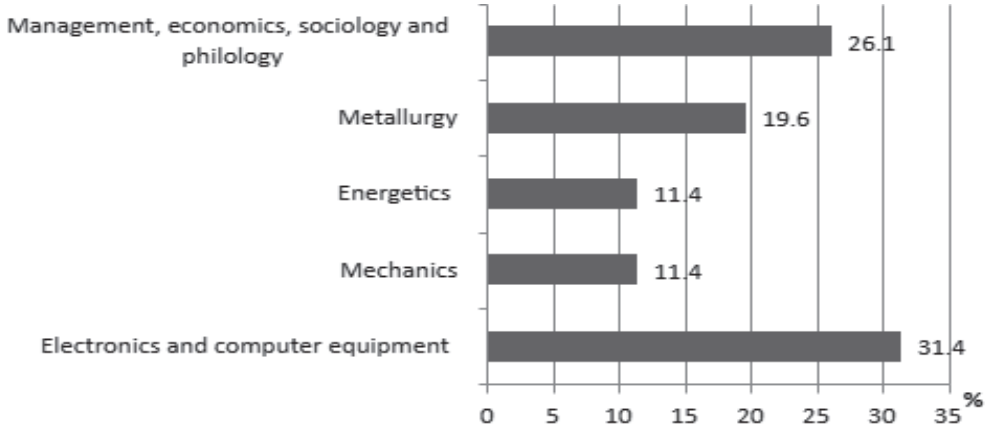


Figure 2. Faculties represented by the respondents

Source: Own work based on http://www.dstu.dp.ua/uni/downloads/osv_traekt.pdf (accessed 14.05.2022)

The maximum activity in the survey was shown by respondents who are beginning their studies at the university level and, accordingly, begin to build their own vision of the future educational trajectory. The distribution of participants by year of study is shown in Figure 3.

The final sample total was 245 people, which with a 95% probability ensures a representation error within 5%. We used random sampling relying on the simple probability sampling method, representative of the year of study and educational programme (Sociological Laboratory of DSTU, 2021).

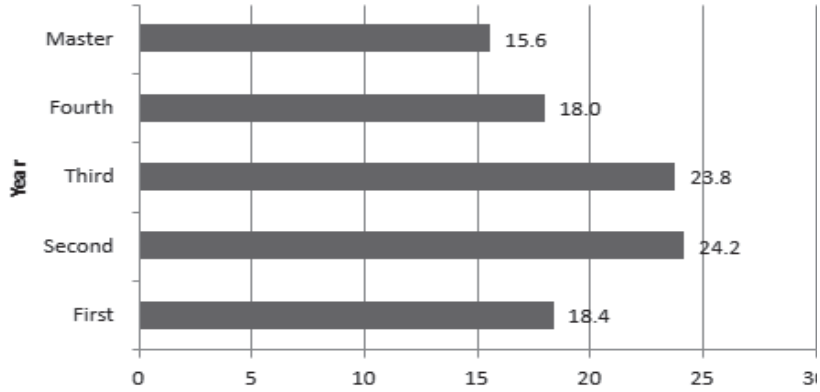


Figure 3. Respondents' term of study

Source: Own work based on http://www.dstu.dp.ua/uni/downloads/osv_traekt.pdf (accessed 14.05.2022)

1.2. Individualising educational trajectory: students' opinions

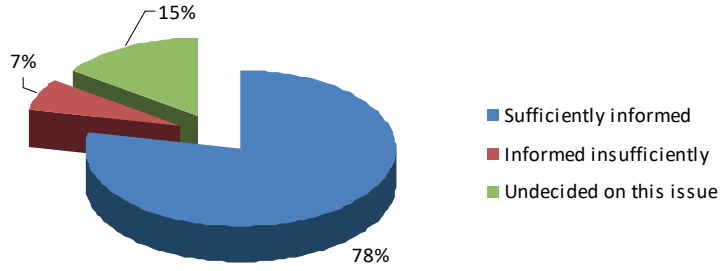
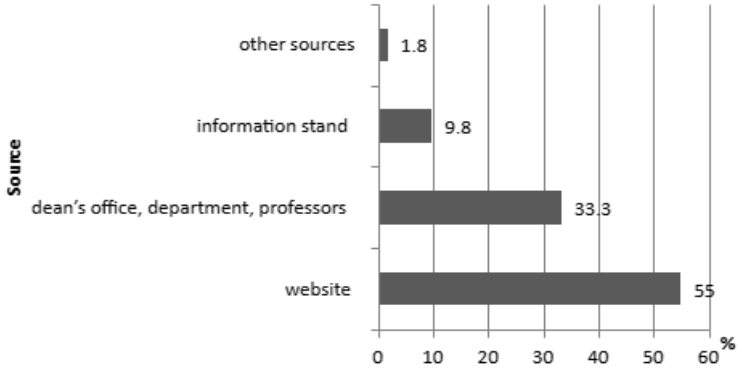


Figure 4. Opinion on the information about elective disciplines

Source: Own work based on http://www.dstu.dp.ua/uni/downloads/osv_traekt.pdf (accessed 14.05.2022)

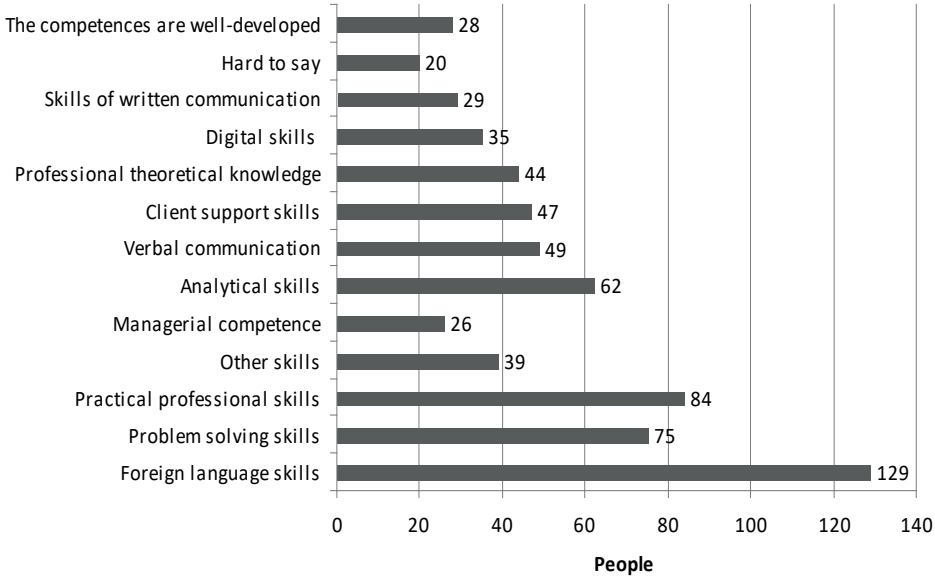
Being an average higher education institution, when it comes to selecting scientific disciplines by the students, we adopt the approach "Completely free choice", which is fixed by the Regulations behind the implementation of the students' right to free choice of educational disciplines at Dniprovsky State Technical University (DSTU). According to survey data (Sociological Laboratory of the DSTU, 2021), the vast majority (75.6%) of respondents individualize their own educational trajectory precisely

at the expense of a wide range of elective disciplines. At the same time, not all students are satisfied with the amount of information about the goals, content and expected results of completing the proposed elective disciplines, which is illustrated in Figure 4, although the students are informed by quite a variety of methods. For instance, candidate preferences regarding the source of information are presented in Figure 5. In contrast, the possibility of choosing a research direction occurs through the free choice of a supervisor with the appropriate range of scientific priorities. This meets the requirements of the majority of respondents (78.5%) with 13.6% undecided on this issue.



F i g u r e 5. Sources of information about selective disciplines

S o u r c e: Own work based on http://www.dstu.dp.ua/uni/downloads/osv_traekt.pdf (accessed 14.05.2022)

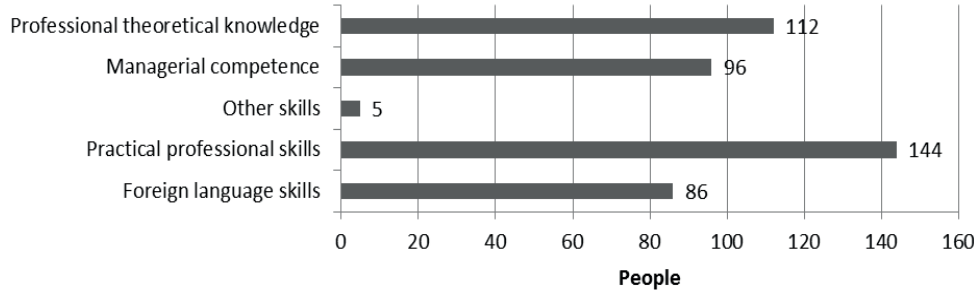


F i g u r e 6. Distribution of desired skills (abilities, skills and competences)

S o u r c e: Own work based on http://www.dstu.dp.ua/uni/downloads/osv_traekt.pdf (accessed 14.05.2022)

Thus, it is possible to draw a conclusion about the generally satisfied expectations of the applicants as for the individualization of the educational trajectory. However, simultaneously there is a desire of the students' to expand / add certain competences to the existing learning outcomes. Taking into account the general trends in the development of society (the largest number of respondents strive to master a foreign languages), the desired competences among the students are distributed as follows (see Figure 6).

When analysing the desired expansion of the competence toolkit, it should be taken into account that the "actual" assessment of graduates changes its structure (see Figure 7).



F i g u r e 7. Distribution of competences meaningful for career success (knowledge, abilities and skills)

S o u r c e: Own work based on http://www.dstu.dp.ua/uni/downloads/rezul_prof_2021.pdf (accessed 14.05.2022)

In other words, the most important resource for achieving the desired professional status and further career planning, is possessing practical professional skills, recognized as a priority by 144 respondents (Career Planning Center, 2020).

2. NORMATIVE REGULATION BEHIND THE INDIVIDUALISATION OF THE EDUCATIONAL TRAJECTORY

According to the Law of Ukraine "On Education": an individual educational trajectory is a personal way of realising the individual potential of an education seeker, which is formed taking into account their abilities, interests, needs, motivation, opportunities and experience, is based on the education seeker's choice of types, forms and pace of education, subjects of educational activity and their proposed educational programmes, educational disciplines and their level of complexity, methods and means of learning, which can be implemented through an individual curriculum (BVR, 2022). At the same time, Article 49 of the Law of Ukraine "On Higher Education" (OBVR, 2022) provides for the right to obtain higher education in one of the main forms (full-time, part-time, distance, online, dual) or a combination thereof.

In doing so, "the higher education institution may use other forms of obtaining higher education and combine forms of obtaining higher education in accordance with the provision on the organisation of the educational process in a higher education institution,

as well as establish requirements for combining forms of higher education" (OBVR, 2022). The regulation on the organisation of the educational process (Gulayev, Peremitko & Hlushchenko et al., 2017) of a higher education institution is supplemented and specified by regulations on the organisation and recognition of results obtained by other (non-institutional) forms of higher education and provisions regulating the procedure for the formation of an individual educational trajectory by education seekers. The result of the shaping of their individual educational trajectory is reflected in the candidate's individual educational plan, which contains, for example, a list of disciplines of free choice and is mandatory. From the list of selective academic disciplines, the candidate must choose any academic disciplines of at least 25% of the total number of ECTS credits.

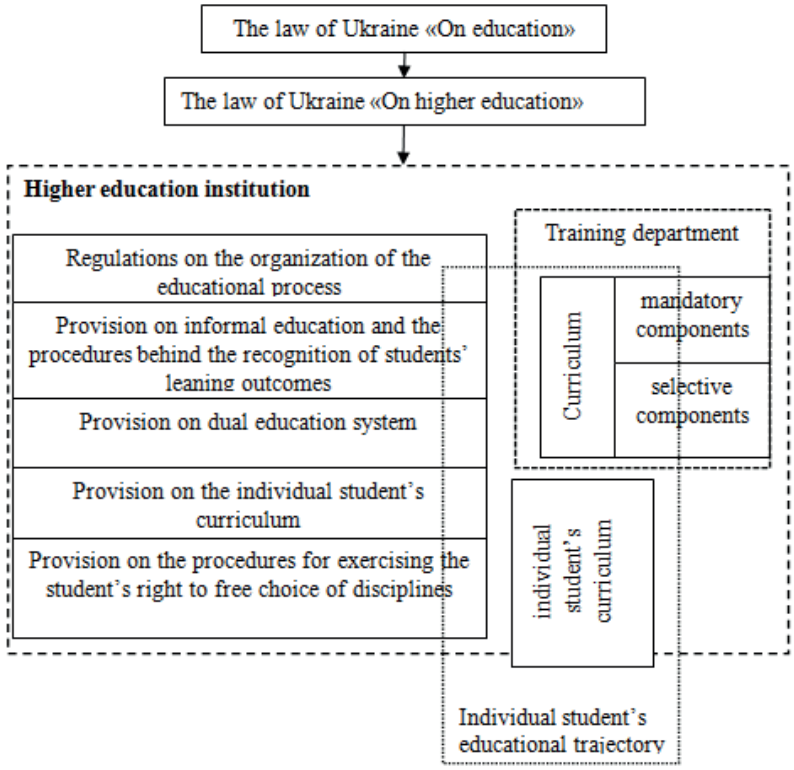


Figure 8. Regulation of the implementation of the individual learning trajectory of higher education candidates

Source: Own work.

Given that the process of implementing candidates' individual educational trajectories is closely related to individual development planning, which is defined as "an organised and guided process implemented directly by the student… the student analyses their learning process, successes and achieved results, and draws up a plan for their individual, educational and professional development" (The Quality Assurance Agency for Higher Education, 2009), the main active aspect in the shaping

of the educational trajectory is the person acquiring the education. Simultaneously, the higher education institution, actively enhanced by other (except face-to-face) forms of education or elements thereof, acts as "an administrator who takes on the functions of creating educational programmes, organising the interaction between teachers and students, and the final certification of graduates" (Nykolaev, 2022).
The final generalised scheme of regulatory support for the implementation of the individual learning trajectory of higher education candidates is shown in Figure 8.

3. DIRECTIONS FOR THE INDIVIDUALISATION OF LEARNING OUTCOMES

Based on the data in Chapter 1, it is possible to formulate the following priority directions in which students wish to individualise their learning outcomes:

- Knowledge of foreign languages;
- Practical professional skills;
- Theoretical professional knowledge;
- Computer skills (despite the low number of responses, it is included in the list, as it is a component of almost all other areas).

It is possible to meet students' existing needs to improve (individualise) their own learning outcomes by involving elements of other forms of obtaining higher education involving an institutional form of education. The possibilities of their use are illustrated in Table 1.
The list of considered areas for the use of elements of various forms of obtaining higher education is not exhaustive. The list does not include variants involving significant material and technical difficulties (for example, the creation of a simulation enterprise to practice practical processes), financial (for example, funding foreign internships), or those of an organisational nature (for example, a compulsory internship in enterprises of the region with issuing professional qualifications). All of the above-mentioned solutions can be implemented to some extent by almost any university, regardless of its current state.

Table 1. Directions for the individualisation of learning outcomes based on the use of elements of various forms of higher education

Learning outcomes	Forms of higher education			
	Institutional	**Distance**	**Online**	**Dual**
	Reasoning: 20% of applicants and students are willing to improve their skills in this area			
Foreign language competence	Widening the offer of elective language courses focused on other courses later in the curriculum		Succeeding with curriculum enhanced by content from foreign educational institution	

	Reasoning: as assessed by graduates from European universities, the decisive factor (25%) of successful employment is «experience and communication in professional environment» (Velden, 2009)			
Practical professional skills	Improving the role and professional focus of practical classes			Taking into account, that absolute majority of students (62.7%) combine study and work, which for 48.3% partially intersect with the university course, and 26.3% are employed in their study field (Career Planning Center, 2020).
	Reasoning: 78% of employers prefer to select willing applicants with «so called general skills, not belonging to the main profile of the chosen position» (Rashkevych, 2014)			
Theoretical professional skills		Relying on asynchronous study mode using ICTs	Involvement of renowned experts of the other subjects of educational process	
	Reasoning: informatisation is a key condition of training students, willing to gain a total awareness of the real world (May, 2002)			
Computer user skills	taking into account the growing popularity of online educational platforms, the most effective (from the point of view of individualisation of the educational trajectory) seems to be the recognition and accumulation of learning outcomes obtained through non-formal and informal education, an example of which can be the European system of credit accumulation and transfer (ECVET) (Cedefop, 2016)			

Source: Own work.

CONCLUSION

Thus, completely free choice, if implemented in the institution under study, gives maximum independence to candidates, but it is difficult for students to navigate the list of disciplines, as it is difficult for them to see the sequential and logical relationship between disciplines. The solutions proposed in Chapter 3 also pose a number of challenges:

- firstly, in the normative and regulatory area – for instance, "the issue of the implementation of some key European documents, for example, opening the

possibility of recognition and accumulation of learning outcomes (and corresponding credit points) is still a debatable issue" (Bakhrushyn, 2022).

- secondly, organisational challenges – when implementing combined forms of education, the responsibility and workload of coordinators of individual student curricula increases significantly due to the continuous individual coordination of prerequisites; requisites; competences to be mastered by the student, as well as programmed learning outcomes for each specific subject with the requirements of the curriculum.

It can be proposed to develop approximate fixed profiles using a combination of elements belonging to different forms of higher education. For instance, the curriculum for the course "Management" might be adapted in the following way:

- "Enterprise": includes dual training in the economic service of a metallurgical or chemical enterprise (which are profiled for the region) combined with an in-depth study of the specifics of metallurgical/chemical production in distance mode.
- "Language": success is envisaged with a part of the curriculum offered by a foreign university (online mode) as a component such selective disciplines as "Second foreign language" and "Foreign language for professional purposes" within one of the institutional forms of higher education.
- "Project Manager": maximum recognition and accumulation of learning outcomes obtained through non-formal and informal learning, in particular offered by online educational platforms.

In view of the above, the offered propositions to improve the design and implementation of the individual learning trajectory of higher education candidates in the specialty 073 "Management" are suitable for implementation, provided that a clear regulatory and organisational mechanism is developed.

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