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Professional training of Economics students in higher educational institutions through the development of entrepreneurial climate

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ABSTRACT

Professional economic education in Ukraine requires significant reforms because of thriving to integrate into the world economic space, which is impossible without the education of highly professional staff. The development of the entrepreneurial climate in the higher educational institution (HEI) by training the ability to work in a team and the general culture of doing business is an important task. It is specialized economic education that should lay the foundation for the dynamic economic development of the country. Methods used: survey, remote collection and processing of information (GOOGLE Forms), self-actualization test (SAT) (determining the level of general cultural competencies), study of value orientations (according to M. Rokych), methods of personal adaptation to a new professional environment (according to L.V. Yankovskyi), cultural and value orientations test (L.H. Pochebut). According to the study, students are convinced that entrepreneurial skills can be acquired. Students called self-organization the main competence for doing business. It was found that 50% of students have a low level of readiness for teamwork. Only 21% of respondents showed a high level of readiness for teamwork. It was found that special pedagogical conditions for creating an entrepreneurial climate can improve the level of higher economic education.

KEYWORDS: business education; economics education; professional training; entrepreneurs; management education.

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Formación profesional de estudiantes de Economía en instituciones de educación superior mediante el desarrollo del clima emprendedor

RESUMEN

La educación económica profesional en Ucrania requiere reformas significativas debido a la posibilidad de integrarse en el espacio económico mundial, lo cual es imposible sin la educación de personal altamente profesional. El desarrollo del clima empresarial en la institución de educación superior (IES) mediante la formación de la capacidad de trabajar en equipo y la cultura general de hacer negocios es una tarea importante. Es la educación económica especializada la que debe sentar las bases del desarrollo económico dinámico del país. Métodos utilizados: encuesta, recopilación y procesamiento de información a distancia (GOOGLE Forms), test de autorrealización (SAT) (determinación del nivel de competencias culturales generales), estudio de orientaciones valorativas (según M. Rokych), métodos de adaptación personal a un nuevo entorno profesional (según LV Yankovskyi), prueba de orientaciones culturales y de valores (LH Pochebut). Según el estudio, los estudiantes están convencidos de que se pueden adquirir habilidades emprendedoras. Los estudiantes llamaron a la autoorganización la competencia principal para hacer negocios. Se encontró que el 50% de los estudiantes tiene un bajo nivel de preparación para el trabajo en equipo. Solo el 21% de los encuestados mostró un alto nivel de preparación para el trabajo en equipo. Se encontró que las condiciones pedagógicas especiales para crear un clima empresarial pueden mejorar el nivel de educación económica superior.

PALABRAS CLAVE: educación empresarial; educación económica; formación de economistas; clima empresarial; cultura empresarial.

Introduction

The study is topical in the modern society, which is actually a transitional state from industrial to post-industrial one, where the education in general and higher education in particular has become a factor in the dynamic socio-economic development of the country. The mechanism of higher education is developing and transforming under the new conditions of globalization and democracy (Logosha et al., 2019). Higher education is becoming a very important social institution, so its whole system needs new approaches (Marques et al., 2018). On the one hand, it is necessary to theoretically substantiate the essence, functions, role of higher education as an institution in the modern economy and society, on the other — to improve the mechanism of higher education.

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Indeed, education is one of the most effective and intensive ways for a person to enter the world of science and culture. A person learns cultural values in the course of education. The world educational space is also developing impetuously. Education is a process of translating culturally designed patterns of behaviour and activities, as well as permanent forms of social life at the same time. In this regard, the dependence of the development of individual countries on the level and quality of education, culture and qualifications of citizens is becoming increasingly clear (Hazen et al., 2017).

The spiritual in a person is manifested through his/her "rooting into" culture. It is in the process of teaching and education that it acquires socio-cultural norms that have historical significance for the development of civilization, society and humanity. Therefore, the urgent needs of social demands must be taken into account in determining the goals and objectives of economic education. In turn, the content of economic education may be limited by the standards of the region, country, the entire world, that take into account the nature of human interaction with cultural values, the extent and degree of their assimilation and creation (Mukesh et al., 2020).

Education manifests itself as a practice of socialization and unity of generations. In different socio-political conditions (and in the period of reforms), a quality economic education is a stabilizing factor between the new social ideas and ideals of previous generations embodied in the historical tradition. The modern economic education performs a stabilizing function and promotes human adaptation to new conditions in the context of radical changes in ideological beliefs, social ideas, ideals and the existence of people in general (Annan-Diab and Molinari, 2017).

In the critical moments of history, it is necessary to ensure the consistency of cultural and historical tradition, preserving the identity of the people and the system of established values. Preservation of the above components facilitates their integration into the system of labour values as elements of the macro-society. At the same time, tradition plays a decisive role in the processes of education of the new generation. The system of economic education embodies the state of trends and prospects for society. So, the economic education is, on the one hand, characterized as preparing the generation for independent living, while on the other hand it lays the foundations for future society and forms the image of a man in the future. Preparation for life means the development of socially accepted way of life, mastering

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various forms of life, the development of human spiritual potential for creation and creativity (European Commission, 2018).

The development of a system of market relations requires a transformation of thinking. Education as a social institution solves the problem of training members of society with economic thinking, requiring new approaches to learning. It applies best pedagogical experience and determines the use of non-traditional forms, methods and tools of teaching and education, as well as the new forms of activity of the subjects of the educational process, which carry the features of both learning and work (Bergmann et al., 2018).

The most effective form of activity is based on the model of interactive learning, which assumes that the subject of learning in the educational process acts as its object, too. Interactive methods contribute to the development of competence, teach democracy, communication, critical thinking and decision-making. Interactive learning technologies are based on cognitive (or traditional), socio-role and behavioural approaches (Table 1).

Table 1. Basic didactic concepts of modern educational technologies

Approach	The main point of the approach	Ways to implement the approach
Cognitive (or traditional)	It is aimed at the development of theoretical thinking; acquisition of knowledge of the basic economic and professional concepts and theories by students; development of basic skills of analysis, generalization, classification and characteristics of phenomena and patterns of economic life of society	Forms and methods of work, the subject of which is the reproduction of the studied material with different methods of adding impetus to traditional classes
Socio-role	It is aimed at mastering the role positions of the subjects in the structure of socio-economic relations, professional self-determination and the formation of business qualities of the individual. All economic phenomena and patterns are considered from the point of view of certain subjects of economic processes	Various active teaching methods and changes in traditional roles and behaviours in the audience
Behavioural	It is aimed at the development of students' competencies for adequate response and decision-making in problematic situations	Solving practical problems; simulation modelling of the organization of joint professional activity; presentation of projects

Source: developed by the authors based on Skinner (2018).

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Cognitive (or traditional) approach is aimed at the development of theoretical thinking and cannot provide a high level of motivation to study the material of the subject and effective interaction of participants in the educational process. In professional training, it is effective only for students with high self-motivation and conscious professional self-determination (Cohen and Robinson, 2018).

The socio-role approach is aimed at mastering the role positions of the subject in the structure of socio-economic relations, and creates conditions for professional self-determination and the development of business qualities of the individual. Its effectiveness is based on the student's at least general idea of the essence and content of particular role functions (Ciliberto et al., 2021).

Behavioural approach is aimed at the development of students' decision-making competencies, and the use of game forms creates the opportunity to master the relevant activities and at the same time gain expertise of "experiencing" it, forming their own attitude to it (Kahu, 2013). Behavioural approach allows implementing the principle of conscious learning and forming a practical experience of their own professional activities, it disciplines, increases self-esteem, creates a positive emotional background (Cui, 2021).

So, recourse to the analysis of the process of economic education (as a process of accumulation of knowledge, training) is evidence of attention, which indicates a desire to take into account objective economic phenomena — real economic processes caused by scientific and technological revolution, and expressed in modern social production (Siswanto et al., 2021).

There are two groups of entrepreneurial competencies depending on the level of their implementation and impact on the competitiveness of the individual:

- Staff competencies necessary for the business entity to implement the strategy and to achieve the main objectives. Corporate development of competencies (caused by the coherent and common private socio-economic interests of all actors, the willingness of the organization to commit to creating the necessary conditions to maintain competitive advantage in the market in order to achieve goals and fulfil the mission;

- Professional characteristics of a particular individual (autonomous, private level) (Cui et al., 2021).

Autonomous development of competencies is the satisfaction of private interests of individual labour units in the development and improvement of their competitive advantages

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in the labour market by increasing knowledge, skills, abilities (Bratianu et al., 2020). A number of researchers also distinguish informational, communicative and project competencies among entrepreneurial competencies, which are expressed in the following characteristics: readiness for effective communication; readiness to use information resources; readiness and ability to apply design methods in practical life; the ability to independently identify the problem, find ways and means to solve it; readiness to self-organize one's own activities; the ability to control oneself in an extraordinary, extreme situation and effectively manage this situation (Elorinne et al., 2017).

Requirements for the structure of entrepreneurial competencies and the general perception of entrepreneurship in society are volatile and change over time. For example, the perception of entrepreneurship depends on the availability of favourable conditions for starting a business, the general level of entrepreneurial knowledge and skills, as well as the level of so-called "fear of failure" (Table 2).

Table 2. Ten important skills needed for business to thrive

Name of skills	In 2015	In 2021
Solving complex problems	1	1
Ability to coordinate actions with other employees	2	5
Human resource management	3	4
Critical thinking	4	2
Ability to negotiate	5	9
Quality control	6	-
Emotional intelligence	-	6
Focus on service delivery	7	9
Ability to make decisions based on analytics	8	7
Ability to listen	9	-
Creativity	9	3
Cognitive flexibility	-	10

Source: developed by the authors based on Skinner (2018).

The aim of the article was to study the essence of the institution of higher economic education, to develop theoretical and methodological background of its transformation and strategic development priorities in the context of knowledge economy, and substantiation of practical recommendations on effective economic education through the development of entrepreneurial climate in Ukraine.

The aim involved the following research objectives:

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1. Research of the level of readiness of economics students for team work.

2. Identifying the level of general cultural business competencies and research of important elements of doing business for students.

1. Literature Review

Over the last 6 years, the priorities of entrepreneurial skills have changed, with the ability to solve complex problems coming first in importance, which certainly means that businesses need support from the state, because they face a fairly large pool of problems that require a solution (Drobyazko et al., 2019).

A number of domestic and foreign scientists deal with the issue of training economics students. Sutia et al. (2020) consider the issue of the advantages of methods of comparative analysis in several areas in their works. Sherkat and Chenari (2020) evaluate the effectiveness of entrepreneurship education in the universities of Tehran province based on the model of entrepreneurial intentions Shah et al. (2020) deal with the deterrent role of entrepreneurship education in the formation of entrepreneurial intentions. Rubinstein (2017) identifies the problem of remarks on the economic rules of Danny Rodrick. The problem of professional training of economics students for the development of the national economy in the context of European integration is covered in the article by Pokatayeva et al. (2020). The interaction of entrepreneurship education and national cultures in entrepreneurship is the subject of an article by Oo et al. (2018). In her article, Novytska (2021) studies the formation of professional competence of economics students in studying mathematical subjects. Nabi et al. (2017) consider the impact of entrepreneurship education on higher education in their article. The work of Maula and Stam (2020) dealt with improving the accuracy of qualitative research of entrepreneurship. The impact of corporate education in Sweden's three leading compulsory schools is studied in Lackéus and Sävetun (2018).

2. Methods

2.1 Research Design

Research on the professional training of economics students through the application of personal-activity approach to the professional culture for the development of entrepreneurial activity was conducted in 3 stages:

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1. The choice of methods that allow identifying the effective way of the development of professional culture of economics students in HEIs, and determining its real state.

2. Conducting research in four HEIs of Kyiv.

3. Collection and processing of the data obtained, their analysis, identification of the dependence between the phenomena of interest. Drawing conclusions about the existing relationship between a high level of professional culture of economics students in universities, stages and the development of a system of general cultural and professional competencies of students involved in research.

2.2. Sample

Students of higher educational institutions were considered as a general population. The study involved 944 students of HEIs of Kyiv: Ukrainian State University of Finance and International Trade (HEI 1), Ukrainian State University of Finance and International Trade), National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (HEI 2), Kyiv National University of Technologies and Design (HEI 3), Kyiv University of Management and Entrepreneurship (HEI 4)) of the 3rd and 4th years of bachelor's degree and 2nd year of master's degree. The respondents involved 624women (66.1%) and 320 men (33.9%). The distribution my majors was as follows: there were 491 students majoring in Management, 405 students majoring in Economics, and 48 students majoring in Business Informatics. Such a sample allows analysing the issue under study more carefully. A high level of representativeness of the obtained results is achieved.

A statistical study poses a requirement that the error of representativeness with a probability of 0.95 does not exceed 10%, so the coefficient of variation is 0.3. An online survey was conducted to ensure the safety of respondents in connection with quarantine restrictions. The survey was conducted electronically (Singleton et al., 2017).

The following methods were selected to identify and evaluate indicators that indicate the level of professional culture of economics students in HEIs:

- self-actualization test (SAT) (determining the level of general cultural competencies);
- study of value orientations (according to M. Rokych);
- methods of personal adaptation to a new professional environment (according to L.V. Yankovskyi);

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- cultural and value orientations test (L.H. Pochebut).

Such a sample allows covering a sufficient number of respondents to ensure a high level of validity of the results. The main limitations of the study can be the sample consisting of students of HEIs of Kyiv only. This, in turn, does not distort the reliability of the results obtained because the sample is formed in such a way as to cover all the strata of students studying in the average HEI of Ukraine.

2.3. Methods

1. The study was conducted using the following diagnostic methods: questionnaires, surveys, interviews.

2. The method of finding the average level of teamwork in students was determined by Formula 1.

$$AL = (l + 2m + 3h) / 100, \quad (1)$$

where l, m, h is the percentage of students who have low, medium and high levels of readiness for teamwork, respectively.

3. The difference between the averages at the end and beginning of the experiment G shows the absolute increase in AL, which was calculated by Formula 2.

$$G\ (AL) = AL\ (final) — AL\ (initial), \quad (2)$$

where AL (initial) — the initial AL value;

SP (final) — the final AL value.

4. The efficiency ratio (ER) shows the efficiency of the experimental work, calculated by Formula 3.

$$ER = AL\ (experimental\_group) / AL\ (control\_group), \quad (3)$$

where AL (experimental_group) — the average level in the experimental group;

AL (control_group) — the average level in the control group;

5. Qualitative increase in the level of readiness of students for teamwork, the statistical significance of the experiment is assessed using Pearson's chi-squared test:

$$\chi^2 = \frac{1}{N_1 N_2} \sum_{i=1}^{c} \frac{(N_1 O_{2i} - N_2 O_{1i})^2}{O_{1i} + O_{2i}} \quad (4)$$

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where N_1 – the number of students in the experimental group;

N_2 — the number of students in the control group;

O_{1i} — the number of students in the experimental group who are at the i^{th} level of readiness for teamwork;

O_{2i} — the number of students in the control group who have the i^{th} level of readiness for teamwork;

C — the number of levels ("i") (Stevenson and Josefy, 2019).

2.4. Instruments

Google Forms were used for the survey. Data entry and processing was performed in SPSS Statistics 17.0. All data are given in relative (% of the number of respondents) values.

3. Results

The capabilities of one person in performing any work are limited. Thus, a team of like-minded people is always able to interact more and more effectively, but there are risks of interpersonal conflicts, which can be avoided if team members have a high level of readiness for teamwork. The ability to carefully and attentively treat the feelings of team members is the most important factor for teamwork and making informed and correct decisions aimed at determining the common opinion of all team members. These decisions are often difficult because of the heterogeneity of the team, its members have different temperaments and emotional states, which can lead to misunderstandings and conflict situations. To avoid such acute moments, students must be able to feel the moods, desires and opinions of their colleagues, thus increasing the effectiveness of the student team.

According to the results of the survey among students, there is a clear understanding that they will definitely need business skills and relevant entrepreneurial competencies (86% of students) in order to carry out professional activities (Figure 1).

At the same time, students generally believe that entrepreneurial abilities are those abilities that can be assimilated in the learning process, which confirms the need to develop this area and create special educational programmes for students (Figure 2).

When assessing the importance of competencies for doing business (Figure 3), it was found that students consider IT competencies, the ability to negotiate, generate ideas and create presentations the most important competencies for doing business.

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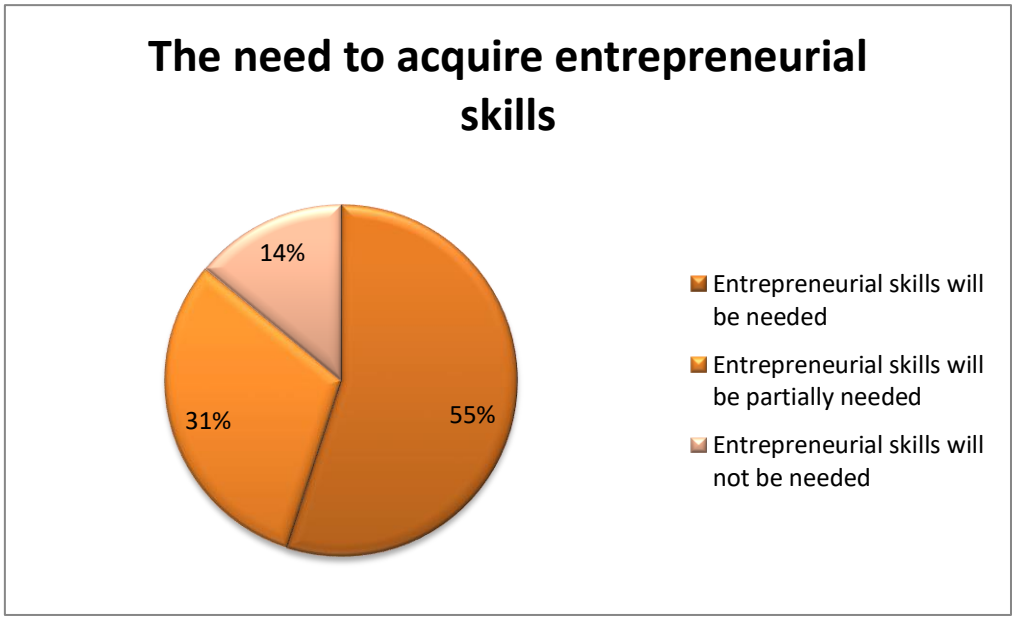
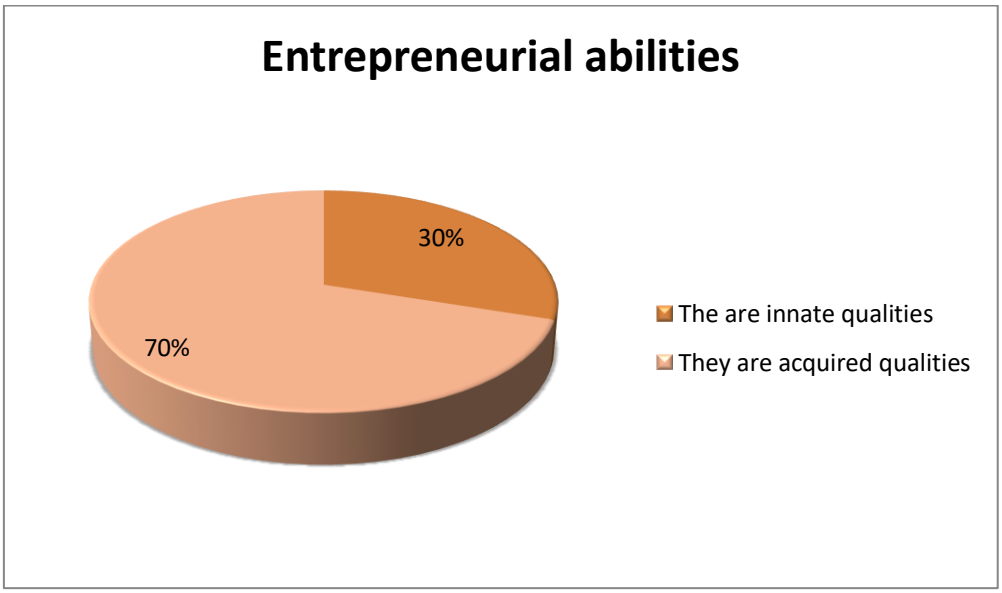
Figure 1. Opinion of potential entrepreneurs about the need for entrepreneurial competencies in employment.



Source: authors

Figure 2. Opinion of potential entrepreneurs about the development of entrepreneurial abilities

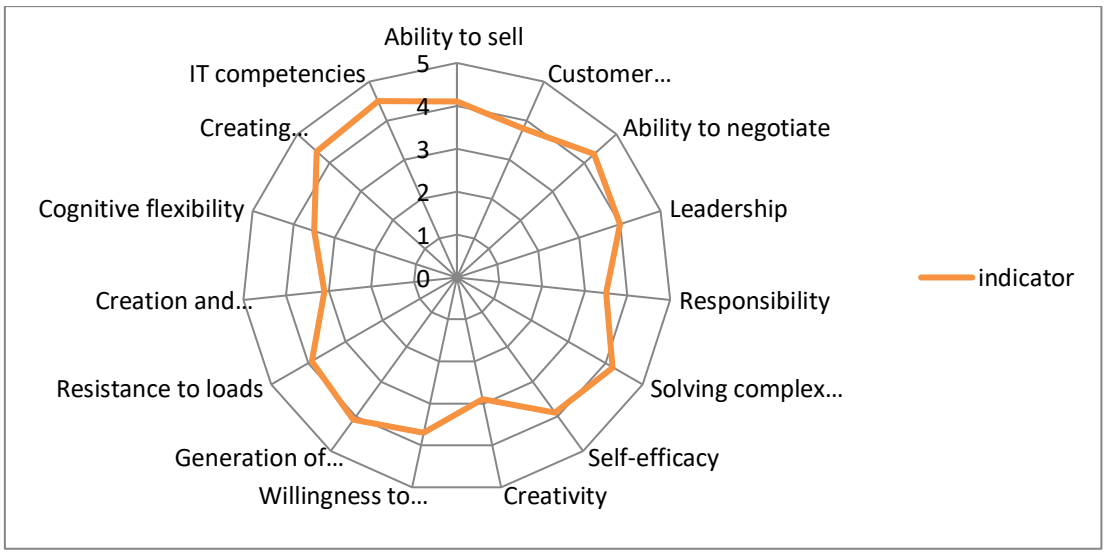


Source: developed by the authors based on the survey results

Some students distinguished self-organization within the additional competencies. Respondents considered competencies related to solving problems through professional and social interaction, creativity, leadership, idea generation, and innovation to be of little

importance (Table 3). This is due to the fact that students do not have the skills to start their own business, underestimate the skills that contribute to business development (especially creativity), distinguishing more organizational issues: how and what to do to implement a business project. At the same time, all respondents in one way or another recognize the need for business programmes of subjects in the field of management. Marketing and Sales Management (96), Economics and Business Security (154) obtained the largest number of answers among the basic subjects.

Figure 3. Outline of the importance of entrepreneurial competencies



Source: developed by the authors based on the survey results

Table 3. Indicators of the level of professionally significant personality traits in students of experimental and control groups at the beginning and at the end of the experiment

Personality traits	Summative stage		Formative stage	
	Experimental group	Control group	Experimental group	Control group
Sociability	50%	49%	90%	54%
Goodwill	62%	68%	85%	71%
Authenticity	61%	56%	77%	68%
Openness	67%	61%	92%	71%
Initiative	71%	43%	89%	53%
Tact	50%	66%	92%	72%
Flexibility	50%	43%	86%	55%

Source: authors.

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Obviously, we can speak about the development of professional culture only when there is an effective interaction between teachers, social partners and students. Analysis of activities conducted with students who have undergone an experimental system of education, showed that many of them have developed a fairly high level of professionally significant personality traits necessary for successful performance of the entrepreneur's role.

The index of general satisfaction with communication between students and representatives of social partners increased (a colour test was conducted) as a result of the application of modelling the real business environment. Comparative analysis of the obtained data revealed a higher increase in indicators in the experimental group (total increase by 3-4 conventional units). The differences between the initial and final measurements in the experimental group are significant — 30 - 40%, and in the control group — statistically insignificant.

This fact allows us to conclude about the more intensive development of professionally significant personality traits of students in the experimental group. As the data in Table 4 show, there is a certain relationship between the process of the development of professionally significant personality traits of a future entrepreneur and a high level of professional culture.

Table 4. Indicators of the scope of practical application of professionally significant personality traits of students of experimental groups

TRAITS	AREAS OF PRECTICE							
	In studies		In practice		With friends		At home	
	Yes	No	Yes	No	Yes	No	Yes	No
Sociability	87%	13%	**100%**	-	96%	7%	**100%**	-
Goodwill	**100%**	-	**100%**	-	71%	27%	94%	4%
Authenticity	79%	22%	**100%**	-	94%	9%	**100%**	-
Openness	76%	22%	73%	26%	90%	8%	71%	23%
Initiative	74%	25%	96%	-	95%	5%	81%	17%
Tact	90%	8%	**100%**	4%	81%	17%	90%	9%
Flexibility	95%	6%	90%	8%	75%	22%	81%	16%

Source: authors.

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A significant increase in the level of professionally significant qualities in students was recorded in the analysis of their professional activity during the internship. The supervisors of the internship, who conducted the analysis, noted the high initiative, friendliness, sociability, tact of students in communicating with staff; pointed to the ability of students to understand and respond quickly to changing situations of professional communication; drew attention to the ability of students to show authenticity, openness and frankness. These data show that the professionally significant personality traits of students were developed in the process of their interpersonal relationships with teachers and other participants in the process of developing a professional culture. These qualities go beyond the professionally significant environment of HEIs and are applied in other spheres of their activity.

Such qualities as sociability, initiative, empathy, tact, friendliness and flexibility are the most pronounced in different situations of interaction in the process of professional activity and training. According to students, authenticity, immediacy, frankness are better manifested in informal communication than in the relationship with the teacher and in practice. This indicates that students, in relation to other participants in the pedagogical process, still retain role stereotypes of behaviour, while in other situations they go beyond the usual communication. It is likely that they simply change their social status (teacher, student, internship supervisor, friend, family member), on which a greater or lesser manifestation of certain personality traits qualities depends. Facing with such problems in research makes realize that the teacher and the student is the interconnected system in which the state of one determines the state of the other.

Thus, the actualization and stimulation of interaction of teachers, social partners and economics students determines their own professional and personal development, as well as harmonizes their relationship with a professionally significant environment and, consequently, increase the impact on professional culture. The considered tendencies explain influence of various kinds of interpersonal relations on actualization and development of the personality that, in turn, influences process of adaptation of students to mastering of a profession and to professional activity of the economist in graduates (Figure 4).

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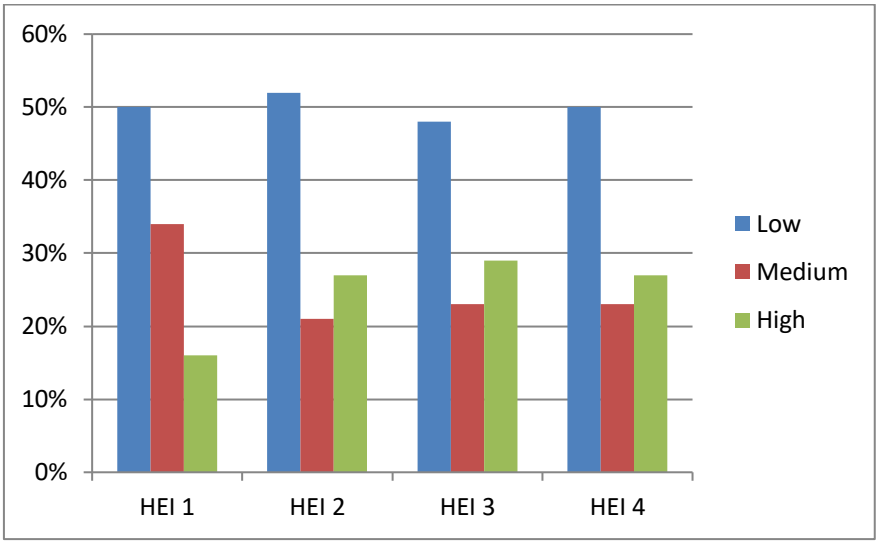
Figure 4. The results of the summative experiment in groups by the level of readiness for teamwork of students of different HEIs



Source: authors.

In the course of the research, answering the questions of diagnostic tests, students agreed with the relevance of knowledge about this type of interaction and noted the need for teamwork in the current labour market. It was found that 50% of students have a low level of readiness for teamwork. They note the lack of experience of teamwork, fear of teamwork due to difficulties in establishing contact with their peers and lack of flexibility in communication.

In a student group, some students can do their job alone, they are closed and not talkative, they are difficult to rely on in matters that require teamwork. There were 29% of respondents with an average level of readiness for teamwork, which indicates that the students are able to engage in a teamwork only under the teacher's control, who sets the rules for each student — a team member? and controls the course of teamwork. Such a team can work effectively only if these conditions are met. Only 21% of respondents showed a high level of readiness for teamwork. These students understand the peculiarities of this interaction and can easily use teamwork in professional training.

Analysis of the results of the chi-squared test showed that the summative experiment confirms the null hypothesis, according to which all groups (three experimental and one control) had no significant differences, as the value of $\chi 2_{studied}$ is smaller than $\chi 2_{critical}$. (P=0.9996) (Table 5).

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Table 5. The value of the χ^2 when comparing groups by level of students' readiness for teamwork

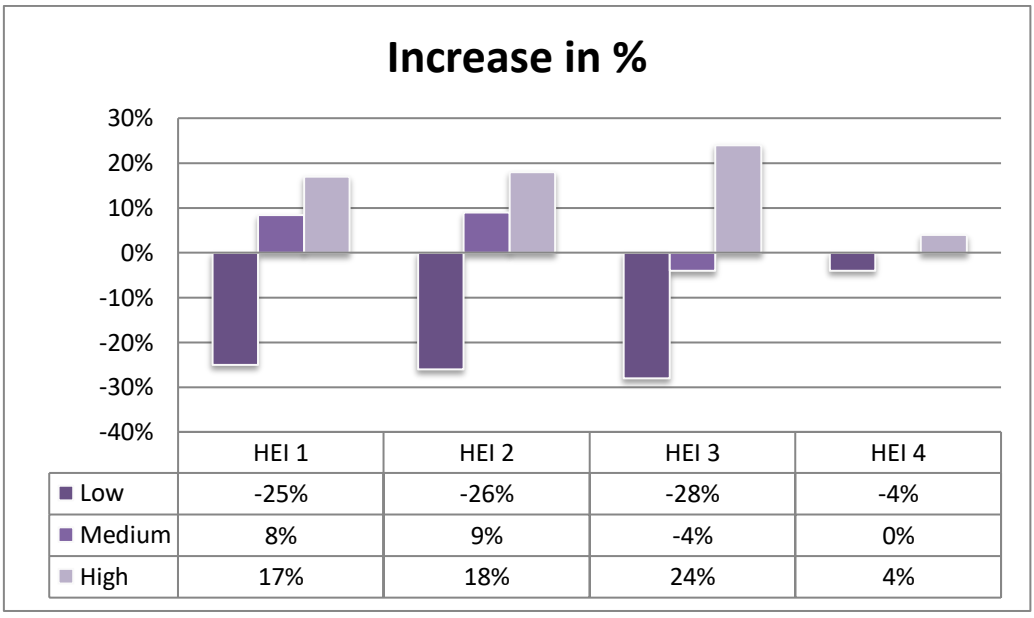
HEIs	Value of χ^2 studied	Value of χ^2 critical	Number of the degrees of freedom	P
1, 2, 3, 4	0.28	12.58	6	0.9996

Source: authors.

The analysis of the results obtained in the formative experiment to increase the students' level of readiness for teamwork showed the following results shown in Figure 5.

Figure 5 shows that the largest increase in the number of students with a high level of readiness for teamwork in HEI 3 (24%). This is 7% more than in HEI 1, 6% more than in HEI 2, and 20% more than the increase obtained in HEI 4. Comparison of the obtained data on the low level of readiness for teamwork shows that the highest values are also observed in the third experimental group (HEI 3) at 28%.

Figure 5. Increase in the level of readiness for teamwork of students of technical universities (in %) in groups: a formative experiment



Source: authors.

According to the results of the calculation presented in Table 6, the null hypothesis (H_0) was proved in the first and second experimental groups,. This suggests that the implementation of individual combinations of pedagogical conditions is not statistically

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significant. The alternative hypothesis (H_i) was confirmed in the third experimental group, because $\chi 2_{studied} > \chi 2_{critical}$ (6.35› 5.99,), P ‹0.05 (P = 0.042), which indicates a non-accidental phenomenon of changing the level of readiness of students of technical university for teamwork in the implementation of the structural-functional model and set of pedagogical conditions.

Table 6. The value of the χ^2 when verifying H_o

HEI	Value of $\chi^2_{studied}$	Value of $\chi^2_{critical}$	P	Statistical significance
1 and 2	2.58	5.99	0.274	Not significant
2 and 3	2.41		0.296	Not significant
3 and 4	6.35		0.043*	Significant

Source: authors.

These results can be re-obtained in similar circumstances. The study and the results obtained during the experiment allow concluding about the achievement of the aim of the study.

4. Discussions

The methodology of research of the need for entrepreneurial education for potential entrepreneurs was tested on a sample of students of HEIs (944 people). Entrepreneurial potential was found in 43% of students. The needs of potential entrepreneurs in current skills, first of all, necessary for work in modern conditions of digitalization and variability of business environment are determined. These findings confirm the data of the study by Shah et al. (2020), and differ from the data of the study Novytska (2021), which notes that future entrepreneurs see the greatest need in the development of communication skills. A number of social and creative competencies are still underestimated by students because they do not have the skills to start their own business and business communication experience. This is confirmed by research of Pokatayeva et al. (2020). Respondents attach more value to organizational issues: how and what to do to implement a business project. Such conclusions do not contradict the results of the study by Lackéus and Sävetun (2018), in which IT competencies are of the greatest value. The study showed that students consider traditional teaching methods more effective. These data contradict the works of Cui (2021) and

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Siswanto et al. (2021) in which the use of modern non-traditional methods is an important factor in successful training. This suggests that students who obtain higher education are focused mainly on lectures and seminars, so they expect practice from business education programmes. Cui et al. (2021) also cite the high expectation of gaining practical skills from business education in their study.

The survey method showed its effectiveness in achieving the aim and fulfilling the objectives. Students as representatives of intellectual potential for entrepreneurship have a positive attitude to the need to increase entrepreneurial competencies. Such conclusions also coincide with the data presented in the studies of Bergmann et al. (2018) and Bratianu et al. (2020). This happens even if they have innate abilities. Students believe that such competencies can be obtained through training both in the form of inclusion of business subjects in the main programmes of higher education, and in the form of training in additional programmes of business education. Maula and Stam (2020) come to such conclusions in their research.

The importance of basic and specialized business subjects is confirmed. At the same time, when implementing entrepreneurship education programmes, it is necessary to focus on traditional forms, as well as modern educational and information technologies, actively involving them in conducting classes. These results contradict the data of the study by Sherkat and Chenari (2020), which notes the need to move to non-traditional educational forms. The needs for current skills are identified: organization of startups, promotion of business on the Internet, business security, etc., which are required by potential business entities to work in the modern conditions of digitalization and variability of the business environment.

The theoretical consequences of the study are the justification of the need to model the development of the business climate in the training of economics students. The practical consequences of the study are the formation of a system of educational and cognitive tasks for developing skills necessary for doing business in economics students. This can help improve the development of professional competencies of future specialists.

The main limitations of the study are the difficulty of identifying the results of the study due to the limited ability to involve more HEIs from different regions of Ukraine. It was difficult to test the research materials in the real educational process because of quarantine restrictions posed by the COVID-19 pandemic.

Conclusions

The study is topical because of the need to improve modern economic education in Ukraine. Global processes are creating new and new challenges for developing countries, so the labour market needs highly qualified specialists in the field of economics and business. Criteria-diagnostic tools for assessing the level of readiness for teamwork, criteria and indicators for assessing the level of readiness of students for teamwork have been identified and tested. Cognitive criterion that determines the level of knowledge of students in the field of teamwork (indicators: completeness of knowledge about the goals and features of teamwork, team relationships; completeness of knowledge about team roles and team building techniques). Operational criterion that determines the level of students' competencies in teamwork (indicators: empathy in teamwork; tolerance in teamwork; possession of reflected skills in teamwork; mastery of group cohesion; mastery of team planning and teamwork skills; skills to work with team members). Axiological criterion that determines the level of students' value attitude to teamwork (indicators: the manifestation of skills to defend the team's interests; awareness of team role and responsibility for the task; awareness of the value and common purpose of teamwork).

The reliability of the experimental data was verified through Pearson's chi-squared test. The research can be useful for both students and teachers seeking to improve economic education in Ukraine. Of course, this study does not cover all aspects of this problem. Further research can focus on the development of the readiness of students of HEIs for teamwork in other areas of training, as well as the development of electronic educational resources for teachers of HEIs for diagnostics and organization of teamwork of students to improve professional training.

References

Annan-Diab, F., Molinari, C. (2017). Interdisciplinarity: Practical approach to advancing education for sustainability and for the Sustainable development goals. The International Journal of Management Education. 15(2), 73-83. DOI: https://doi.org/10.1016/j.ijme.2017.03.006

Bergmann, H., Geissler, M., Hundt, C. Grave, B. (2018). The climate for entrepreneurship at higher education institutions. Research Policy, 47(4), 700–716. DOI: https://doi.org/10.1016/j.respol.2018.01.018

Bratianu, C., Hadad, S., Bejinaru, R. (2020). Paradigm shift in business education: a competence-based approach. Sustainability, 12(4), 1348. DOI: https://doi.org/10.3390/su12041348

Cohen, J., Robinson, C. (2018). Enhancing teaching excellence through team-based learning. Innovations in Education and Teaching International, 55(2), 133-142. DOI: https://doi.org/10.1080/14703297.2017.1389290

Ciliberto, C., Szopik-Depczyńska, K., Tarczyńska-Łuniewska, M., Ruggieri, A., Ioppolo, G. (2021). Enabling the Circular Economy transition: a sustainable lean manufacturing recipe for industry 4.0. Business Strategy and the Environment, 12 (Ahead of print). DOI: https://doi.org/10.1002/bse.2801 (accessed 21.09.2021).

Cui, J. (2021). The Impact of entrepreneurship curriculum with teaching models on sustainable development of entrepreneurial mindset among higher education students in China: the moderating role of the entrepreneurial climate at the institution. Sustainability, 13(14), 7950. DOI: https://doi.org/10.3390/su13147950

Cui, J., Sun, J., Bell, R. (2021). The impact of entrepreneurship education on the entrepreneurial mindset of college students in China: The mediating role of inspiration and the role of educational attributes. The International Journal of Management Education, 19(1), 100296. DOI: https://doi.org/10.1016/j.ijme.2019.04.001

Drobyazko, S., Potyshniak, O., Radionova, N., Paranytsia, S., Nehoda, Y. (2019). Security of organizational changes via operational integration: ensuring methodology. Journal of Security and Sustainability Issues, 9(1), 1595-1612. DOI: http://doi.org/10.9770/jssi.2019.9.1(8)

Elorinne, A. L., Arai, N., Autio, M. (2017). Pedagogics in home economics meet everyday life. In: E. Kimonen, R. Nevalainen (Eds.) Reforming teaching and teacher education (pp. 145-168). Rotterdam, Sense. DOI: https://doi.org/10.1007/978-94-6300-917-1_6

European Commission. (2018). Council recommendation on key competences for lifelong learning. Official Journal of the European Union, 61(189), 1-3. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01)&rid=7

Hazen, B. T., Bradley, R. V., Bell, J. E., In, J., Byrd, T. A. (2017). Enterprise architecture: A competence-based approach to achieving agility and firm performance. International Journal of Production Economics, 193, 566-577. DOI: https://doi.org/10.1016/j.ijpe.2017.08.022

Kahu, E. R. (2013). Framing student engagement in higher education. Studies in Higher Education, 38, 758-773. DOI: https://doi.org/10.1080/03075079.2011.598505

Lackéus, M., Sävetun, C. (2018). Assessing the impact of enterprise education in three leading Swedish compulsory schools. Journal of Small Business Management, 57, 33-59. DOI: https://doi.org/10.1111/jsbm.12497

Logosha, R., Bondarenko, V., Samokhval, O., Pavelkiv, R., Petrenko O. (2019). Entrepreneurship education of future economists in the process of preparation. Journal of

Entrepreneurship Education. 22(6), 1-7. http://socrates.vsau.edu.ua/repository/getfile.php/23285.pdf

Marques, C. S., Santos, G., Galvão, A., Mascarenhas, C., Justino, E. (2018). Entrepreneurship education, gender and family background as antecedents on the entrepreneurial orientation of university students. International Journal of Innovation Science, 10(1), 58-70. DOI: https://doi.org/10.1108/IJIS-07-2017-0067

Maula, M., Stam, W. (2020). Enhancing rigor in quantitative entrepreneurship research. Entrepreneurship Theory and Practice, 44(6), 1059-1090. DOI: https://doi.org/10.1177/1042258719891388

Mukesh, H. V., Pillai K. R., Mamman, J. (2020). Action-embedded pedagogy in entrepreneurship education: an experimental enquiry. Studies in Higher Education, 45(8), 1679-1693. DOI: https://doi.org/10.1080/03075079.2019.1599848

Nabi, G., Liñán, F., Fayolle, A., Krueger, N., Walmsley, A. (2017). The impact of entrepreneurship education in higher education: a systematic review and research agenda. Academy of Management Learning & Education, 16, 277–299. DOI: https://doi.org/10.5465/amle.2015.0026

Novytska, L. (2021). Formation of professional competence of future economists in the process of studying mathematical disciplines. The Scientific Heritage, 62(4), 32-42. DOI: https://doi.org/10.24412/9215-0365-2021-62-4-32-42

Oo, P.P., Sahaym, A., Juasrikul, S. (2018). The interplay of entrepreneurship education and national cultures in entrepreneurial activity: a social cognitive perspective. Journal of International Entrepreneurship, 16, 398-420. DOI: https://doi.org/10.1007/s10843-018-0229-4

Pokatayeva, O., Diachenko, M., Kravchenko, V. (2020). Problem of professional training of future economists for development of national economy under conditions of European integration. Baltic Journal of Economic Studies, 6(5), 148-154. DOI: https://doi.org/10.30525/2256-0742/2020-6-5-148-154

Rubinstein, A. (2017). Comments on economic models, economics, and economists: Remarks on economics rules by Dani Rodrik. Journal of Economic Literature, 55(1), 162-172. DOI: https://doi: 10.1257/jel.20161408

Shah, I. A., Amjed, S., Jaboob, S. (2020). The moderating role of entrepreneurship education in shaping entrepreneurial intentions. Economic Structures, 9, 19. DOI: https://doi.org/10.1186/s40008-020-00195-4

Sherkat, A., Chenari, A. (2020). Assessing the effectiveness of entrepreneurship education in the universities of Tehran province based on an entrepreneurial intention model. Studies in Higher Education, 45(3) (Ahead of print). DOI: https://doi.org/10.1080/03075079.2020.1732906

Singleton, R., Straits, B. C., Straits, M. N., McAllister, R. J. (2017). Approaches to Social Research, 6th edition. Oxford, Oxford University Press, 672 p.

Siswanto, E., Kardoyo, Rustono, Raharjo, T. J., Samsudi, Sumaryanto, T., Yulianto, A. (2021). Teaching factory financial management in vokasional school. European Journal of Molecular & Clinical Medicine, 7(3), 5691-5707. https://ejmcm.com/pdf_5963_f6f59b325f3dfa8ca7358d00088794b6.html

Skinner, C. (2018). Digital Human: The Fourth Revolution of Humanity Includes Everyone. New York, Wiley, 400 p.

Stevenson, R. M., Josefy, M. (2019). Knocking at the gate: The path to publication for entrepreneurship experiments through the lens of gatekeeping theory. Journal of Business Venturing, 34(2), 242–260. DOI: https://doi.org/10.1016/j.jbusvent.2018.10.008

Sutia, S., Riadi, R., Fahlevi, M., Istan, M., Juhara, S., Pramono, R., Purwanto, A., Purba, J. T., Munthe, A. P., Juliana. (2020). Benefit of benchmarking methods in several industries: a systematic literature review. Systematic Reviews in Pharmacy, 11(8), 508-518. DOI: https://doi.org/10.31838/srp.2020.8.72