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ENTREPRENEURIAL EDUCATION FROM THE PERSPECTIVES OF SELF-DETERMINATION AND SELF-DEVELOPMENT FOR FUTURE ENGINEERS

ABSTRACT

This article presents the results of a study on the impact of entrepreneurial education on the formation of entrepreneurial qualities in future engineers through personal self-determination and professional self-development. The integration possibilities of professional engineering education with entrepreneurial preparation are highlighted. The role and significance of motivation for entrepreneurial activity among future engineers are clarified. The concepts of "self-determination", "development", and "self-development" for future engineers are specified. It has been proven that individual self-determination and motivation for integrative self-development play a decisive role in forming a specialist as both an engineer and an entrepreneur, among other factors. Implementing the research results will enhance the effectiveness of entrepreneurial education and stimulate the self-development of entrepreneurship, fostering future engineers' desire to actively participate in the socio-economic development of the state.

The purpose of the study is to determine the specific influence of entrepreneurial education (including programs, methods and technologies, content, and forms) on the formation of entrepreneurial qualities in future engineers from the standpoint of self-determination and depending on the level of integrative self-development. The study employs theoretical methods such as analysis of scientific literature, generalization of received information, system analysis, and interpretation of empirical data; and empirical methods including diagnostic methods and methods of mathematical statistics.

KEYWORDS

engineer, self-determination, self-development, entrepreneurship, career, business plan, economic freedom.

Introduction

The socio-economic and political instability of Ukrainian society under martial law leads to rising unemployment and a decline in the standard of living of the population. Among the causes of the economic crisis, despite the conditions of martial law, the notable issues include the complexity of the domestic labor market situation, the technological obsolescence of production, and the predominance of traditional models, methods, and technologies of economic development. Successful overcoming of these crisis phenomena is possible if value priorities are formed in society, aligned with the latest European standards. One of these priorities is the attitude towards entrepreneurship as a key direction for post-war reconstruction and the development of Ukraine's economy, contributing to the growth of people's well-being [8, 10, 19]. Understanding the importance of stimulating entrepreneurship is reflected in the strategic development goals at the international, national, and regional levels. The National Economic Development Strategy of Ukraine for the period until 2030 takes into account the development of entrepreneurship as one of the „important cross-cutting areas.” However, entrepreneurial education, as one of the basic conditions for the development of entrepreneurship itself, is not mentioned in this document [31].

In Ukraine, scientists are increasingly interested in the possibilities of introducing entrepreneurial education into the professional training of future specialists. „Modern entrepreneurial education should stimulate and motivate business, the basis of which should be the capitalization of knowledge”, writes Bukharina. The researcher claims that, at the same time, most Ukrainian entrepreneurs, even the new generation, do not possess the knowledge and skills necessary to create a coherent strategy for the future or to dynamically adapt to the external environment [24]. Entrepreneurial education should contribute to solving problems of both economic and social nature.

Therefore, the system of higher education faces a completely new public mandate to train high-quality and competitive engineering and technical workers, including managerial personnel – professionals who can change circumstances, find and build their life trajectory, overcome the fragmentation of knowledge, and realize their own professional, entrepreneurial, and career integrity and identity with a high level of personal self-determination [18]. The execution of such a mandate can be entrusted to the system of entrepreneurial education. For a long time, a significant number of measures aimed at preparing young people for entrepreneurship have been carried out [9, 11], but they lack a systematic approach, provide only the formation of certain skills, and do not address the issues of low entrepreneurial competence among students of vocational education [23].

Literature Review

Such researchers as Morteza Rezaei Zadeh, Michael Hogan, John O'Reilly, James Cunningham, Eamonn Murphy were engaged in researching the problems of entrepreneurial education. In the centre of attention of these authors are the issues of determining the main entrepreneurial competencies, and business qualities of an entrepreneur. The conclusions drawn from comparative studies conducted by Irish and Iranian entrepreneurs, teachers, and students of engineering specialties in Ireland and Iran are inherently close to our research on the essential meanings of entrepreneurship education from the standpoint of self-determination and self-development of future engineers.

O'Connor, researching the conceptual foundations of entrepreneurial education, revealed positive and negative aspects of educational policy, particularly the insufficient alignment with state and economic goals. The author highlights an increasing tendency for state policy to promote entrepreneurship due to its apparent economic benefits. Accordingly, governments seek to use entrepreneurship education as a means of stimulating higher levels of economic activity. However, it has proven difficult to justify the economic benefits of entrepreneurship education. This issue is partly attributed to the multi-definitional perspectives of entrepreneurship. Consequently, there is a lack of a theoretically grounded conceptual framework to help policymakers and educators align the program with specific objectives [12].

The research by Winters, Matusovich & Streveler emphasizes the importance of self-determination and self-development in professional formation and involvement in entrepreneurship. The researchers stress the need to satisfy three key needs when interacting with students: autonomy, competence, and relatedness. Autonomy (independence) refers to the need to feel control or freedom of will. Competence is the need for mastery. Relatedness is the need to belong to a certain community, which in entrepreneurship manifests as the ability to work in a team [20].

The subject of Saras D. Sarasvathy's research is the causal relationships and outcomes of the theoretical transition from economic inevitability to entrepreneurial contingency. The author bases the theory of effectual reasoning as the foundation of entrepreneurial education, with an emphasis on creating firms in non-existent or emerging markets. She argues that effectuation takes „a set of means as given” and focuses on „choosing between the possible effects that can be produced with that set of means.” The process of effectuation depends on the doer, while the process of causation depends on the effect. Some key characteristics of effectuation are selection criteria based on acceptable loss or acceptable risk, excellence in the use of contingencies, and the explicit assumption of a dynamic, nonlinear, and ecological environment. Sarasvathy refers to the theoretical works of March, Mintzberg, and Weick, who discuss the relationship between work and the proposed theory of effectuation. She also outlines four implementation principles: affordable losses, strategic alliances, use of contingencies, and control over the unpredictable future. Based on these principles, a series of tested hypotheses is presented. The hypotheses consider the role of implementation at different levels, including the economy, the market or industry, the firm, and founders/decision-makers. The effectuation theory advanced in this analysis concludes that the main agent of entrepreneurship is the executor. The results of this study provide an important basis for the further development of the theory of entrepreneurial education [17].

The research of Audretsch & Thurik is devoted to the issue of motivation, self-determination, and self-development of individuals, particularly the difference between the models of managed and entrepreneurial economies, which is crucial for motivating students in their self-determination and self-development. The researchers explain why the entrepreneurial economy model may be better than the managed economy model. They contrast the most fundamental elements of the managed economy model with those of the entrepreneurial economy model [2].

Deci & Vansteenkiste state that positive psychology has focused attention on positive human experiences and healthy outcomes, which is an important step towards a more complete understanding of human functioning in the social world. However, the researchers argue that the positive psychology movement has not gone far enough in

defining a metatheoretical foundation for true positive psychology. They believe that a full understanding of optimal experience and healthy development cannot be achieved without linking these processes and outcomes to both optimal experience and reduced functioning. On this basis, the authors discuss the theory of self-determination, suggesting that the concept of basic psychological needs provides a useful basis for predicting whether the social environment will support optimal functioning or, conversely, contribute to maladaptation [5].

In *Learning Environments and Motivation*, Kaplan & Patrick (2016) review the major contemporary motivational perspectives that differ in their theoretical assumptions about the nature of motivation and the role of the environment in motivating people. The authors highlight the underlying assumptions of each perspective regarding the source and malleability of motivation, the mechanisms of motivation change, and how they underlie recommendations for designing motivational learning environments. Researchers see the prospects for the emergence of new models of motivation and describe the possible consequences of this new approach for the research and development of a motivational learning environment [7].

Of particular interest is the self-determination theory (SDT), which Ryan & Deci presented as „an approach to human motivation and personality that uses traditional empirical methods and emphasizes the importance of developing internal human resources for behavioural self-regulation and personality formation” (1997). It is about people’s inherent growth tendencies and innate psychological needs that are the basis for their self-motivation and personal integration, as well as the conditions that promote these positive processes. Inductively, using an empirical process, researchers identified three such needs: competence (Harter, 1978; White, 1963), relatedness (Baumeister & Leary, 1995; Reis, 1994), and autonomy (de Charms, 1968; Deci, 1975) – this is important for promoting the optimal functioning of natural tendencies for self-development and integration, as well as for achieving success in the social sphere and personal well-being [16].

Important for our research are the results of the experimental explorations of Barnes, who attempts to provide a theoretical basis for integrating professional and entrepreneurial education. Barnes defines entrepreneurship, its theoretical principles relevant to vocational education, and outlines the test multidisciplinary experimental entrepreneurship model (MEEM), designed to improve the career aspirations of graduates by cultivating an entrepreneurial mind-set [3]. The results obtained by the researcher demonstrate that the theoretical principles underlying MEEM not only enabled students to create new enterprises but also helped them acquire skills in solving entrepreneurial problems and implementing innovations.

In Ukraine, under modern economic conditions, the development of entrepreneurial education, especially in the context of motivating young people to start their own businesses, develop entrepreneurial ideas, and foster entrepreneurship, has every reason to become the main direction of educational policy regarding the development and reconstruction of the Ukrainian economy.

In the conditions of martial law and the post-war period of overcoming the crisis in Ukraine, the creation of educational hubs of knowledge in cooperation with government structures reflects an understanding of the importance of entrepreneurial education, its role, and its place in transforming business, small entrepreneurship, and the economic

sectors of the country. However, we cannot agree with the notion that entrepreneurial education is „an effective means of developing entrepreneurship and preserving the economy and its future by implementing the latest ideas for the livelihood of small and medium-sized businesses” [25]. Education has broader goals and objectives. It cannot directly affect the development of the economy. Such statements heighten society’s expectations and can later discredit entrepreneurial education as a field that did not live up to its promises, despite considerable efforts and the creation of conditions for studying the basics of entrepreneurship and financial literacy in all vocational education institutions, leading to widespread disappointment.

Education can influence the number of motivated individuals with sufficient entrepreneurial competence, but it does not affect tax policy or start-up financing policy. Not every graduate of vocational education institutions can become an entrepreneur due to natural abilities. Therefore, an important and humane goal of entrepreneurship education at various educational levels is to give every future specialist the opportunity to realize whether they want to be an entrepreneur.

Educational policy in Ukraine includes elements of career guidance, information about the labor market, active entrepreneurship training, counselling on youth entrepreneurship and job search, employment programs, public works, and communal services, and employment subsidies that support the implementation of entrepreneurial training programs. Promoting youth entrepreneurship has the potential for social development, as it gives young people the opportunity to increase their protection against unemployment, ensure self-employment, and create jobs for others, thereby raising their living standards and those of others around them, reducing poverty, and creating sustainable means of livelihood [13].

At the end of the 20th century, developed countries began transitioning from managerial to entrepreneurial economies [2]. In the last 25-30 years, the issue of teaching students entrepreneurship has been discussed worldwide, especially intensively, with the maturation of a new model known as the entrepreneurial university or the third-generation university [27].

Entrepreneurial education in the EU and the USA, as well as in many Asian and African countries, is aimed at developing the ability of young people to create social, cultural, or economic values. It is believed that gaining experience in critical and creative thinking, solving complex problems, conducting negotiations, communication, and leadership can contribute to the development of entrepreneurial thinking of future professionals. Is the goal of entrepreneurial education defined to inform young people about the importance of entrepreneurship? which provides an opportunity to understand whether entrepreneurship is desirable for them and to equip them with entrepreneurial skills (e.g. recognition of business planning opportunities, conducting pilot projects of enterprises), which will allow them to develop entrepreneurial competence, which may be the key to finally solving the question: to look for opportunities to establish their own (future) business or to devote themselves to work as an employee [21].

According to the results of research conducted under the auspices of the Organisation for Economic Co-operation and Development (OECD), it is claimed that the basis for updating entrepreneurship education in EU countries is to address labor market challenges. It concerns young people who have not developed the necessary knowledge, skills, or abilities to make informed decisions about their participation in entrepreneurial

activities. In the EU and OECD, there is a wide range of corporate education providers in Europe, such as schools, universities, colleges, and community organizations, focusing on participation in entrepreneurship or employment orientation. Scientists have devoted many articles to methods of entrepreneurial education integrated into the training of specialists in various fields, particularly engineers. The authors pay significant attention to students' involvement in social entrepreneurship, the influence of cultural features of the country on the formation of entrepreneurial skills, and the introduction of new learning technologies, including online platforms. In the training of future specialists, emphasis is placed on the development of „effective” motivation and behavior [17].

Irish and Iranian scientists Zadeh, Hogan, O'Reilly, Cunningham, & Murphy investigate the impact of business education programs on the formation of key entrepreneurial competencies among students. They examine the connection between university entrepreneurial activity and the development of student entrepreneurship [15]. Australian scientists Barnes & Scheepers focus their research on overcoming uncertainty for journalism graduates and explore methods and models of entrepreneurship education for journalists [3]. One of the leading scientists in the field of entrepreneurial education, Swedish scientist Johannisson, emphasizes the development of „soft skills” crucial for entrepreneurs. These skills include understanding personal motivations for entrepreneurship, business acumen, knowledge of successful business interaction mechanisms, intuition for business initiation, and overall business knowledge [6].

The works of Romanovskyi are devoted to the study of foreign approaches to the professional training of entrepreneurs and the determination of ways and means to apply the experience of entrepreneurial education in leading developed countries to national conditions. Relying on foreign experience, the renowned Ukrainian scientist proves that entrepreneurship is the basis of the national economy, and effective entrepreneurial education is the foundation of the economic development of a democratic society. The researcher analyzed the peculiarities of the formation of approaches to entrepreneurial education in economically developed countries. The socially oriented essence of entrepreneurial education as a component of the economic potential of society has been proven. The theoretical positions put forward by Romanovskyi and the tested technologies are being used in the reform of the entrepreneurial education system in Ukraine [33].

Results

Scholars believe that entrepreneurship education provides academic communities (i.e., faculty, staff, and students) with a set of cognitive and transversal skills related to starting and running a business, including cognitive skills such as finance, business plan development, accounting, and human resource management. resources.

The results of the theoretical analysis of research by domestic and foreign authors made it possible to formulate the definition of the very concept of „entrepreneurial education of future engineers”.

Entrepreneurial education of future engineers is a continuous process of mastering the theory and practice of entrepreneurship, the formation and development of entrepreneurship as a special quality of an individual, which manifests itself in various spheres of activity, situations, and circumstances of human life.

Fixing the structural manifestations of the crisis in the preparation of engineers for entrepreneurship, we propose to consider entrepreneurship education not as a collection of disparate elements, but as a single system that must fulfil its purpose – the involvement of education seekers in achieving a high level of entrepreneurial competence.

In our opinion, entrepreneurial education acquires continuity and the highest level of efficiency, if such factors as „**self-development**” and „**self-determination**” play a significant role in its foundation. Investigating the essential characteristics of the concept of „**self-development**”, we considered the ambiguous meaning of the related concept of „development”.

Human development is a continuous process characterized by both quantitative and qualitative changes that occur throughout an individual's lifespan. Various interpretations of the concept of „development” can be found in scientific literature. Representatives of idealistic philosophy viewed human development as an uncontrolled, spontaneous process occurring regardless of external conditions, with an individual's level of development predetermined at birth. In contrast, modern scientists define development as a specific process of change leading to the emergence of qualitatively new, progressive advancements from lower to higher states, from simplicity to complexity. It is a complex dynamic phenomenon aimed at enhancing an individual's physical and intellectual capabilities, fostering the formation of creative abilities, and encouraging an active civic stance [30, p.84]. Comparing the concepts of „development” and „self-development,” Sokolovska argues that development occurs through the pursuit of externally set goals, whereas self-development is driven by the individual's internal ideas and goals. Self-development is grounded in the individual's aspiration for new achievements, a desire for success and improvement, an active life stance, positive mindset, confidence in one's abilities, and an understanding of life's purpose [34, p.25]. The concept of „self-determination” is perceived as a continuous process and the ultimate outcome of an individual's selection of their own life position, acceptance and assimilation of values, and the formation of behavioural motives guiding them in navigating life, relationships with others, and contemporary production-related issues [1, 14].

The structural elements of personal self-determination among future engineers encompass a multifaceted personality, value orientations (worldview), the selection of a personal stance regarding future career paths, attitudes toward professional endeavours, and inclinations toward entrepreneurship and business activities. Through the lens of self-determination, future engineers and entrepreneurs assess their level of personal and professional development and gain motivated impetus for on-going self-improvement within the framework of entrepreneurial education objectives. The process of self-determination presents opportunities for individual self-development.

The examination of self-determination and self-development processes relied on the activation of reflection. Through the influence of entrepreneurial education, reflection facilitates the exploration of entrepreneurial competence development from the perspective of future engineers' self-development and self-determination, achieved through self-assessment, self-education, and self-regulation. Intensified reflective practices result in shifts in future engineers' perspectives on professional and entrepreneurial activities, leading to enhancements in their business acumen.

The study confirmed our assumption about the essential role of the axiological approach, which is that it allows us to determine a set of values in the personal self-determination and self-development of future engineers. This approach is associated with the identification of objective and subjective conditions that allow one to become a competitive specialist with pronounced business activity. We chose modelling as a method of researching this phenomenon. Social order in the target component model is the personal self-determination of engineering students of higher education institutions as future leaders in production and entrepreneurs. The use of modelling made it possible to create an integrated structural and functional model that covers the process of professional and entrepreneurial training of engineers, personal self-determination, and professional self-development of future engineers in the process of mastering the basics of entrepreneurial activity and developing entrepreneurial competence. The components of the structural-functional model perform the following tasks: functional-target, organizational-methodical, and productive components.

The purpose of the developed model is to study the dynamics of the development of professional and entrepreneurial competence of future engineers under the influence of entrepreneurial education from the standpoint of their personal self-determination and self-development, as well as to confirm our assumption that personal self-determination and self-development of future engineers are decisive factors in the growth of the level of entrepreneurial competence and the formation of the future specialist as an engineer and entrepreneur.

The structure of the model includes the following methodological approaches, principles, and functions:

- system approach and its principles: integrity, hierarchy, structuredness.
- reflective approach and its principles: self-isolation from the environment, reflection of the outside world, goal setting.
- axiological approach and its principles: equality of philosophical views, equality of traditions and creativity, equality of individuals.
- acmeological approach and principles: determinism and development, subjectivity, humanism, modelling, optimality.

Functions in this component are presented as self-development, self-esteem, self-control, self-knowledge, self-discipline, and self-control. In our research, the value of the system approach lies in the fact that it allows for solving the following modelling problems:

1. to investigate the process of personal self-determination and self-development of future engineers as a single system of entrepreneurial education, the purpose of which is the development of entrepreneurial competence of future engineers in the process of mastering the theory and practice of entrepreneurship, the formation of entrepreneurial qualities consisting of interconnected components.
2. to determine the content of the components forming the system, to identify the functions of the system, levels, and stages of the process.
3. to determine the dynamics of the development of entrepreneurial competence of future engineers in the process of mastering the theory and practice of entrepreneurship, and the formation of entrepreneurial qualities.

The organizational and methodical component of the developed model includes stages, a complex of pedagogical conditions, and the content of courses and methods of their implementation. It was found that the process of self-determination and self-development should include three stages.

The first stage is defined as motivational, aimed at forming the future engineer's motivation for self-determination and self-development. This is because, in the mind of the student, it is necessary to support, strengthen, and develop the idea of a successful career and awareness of needs that will stimulate him to form personal self-determination. At this stage, this is due to the development of their information fields in matters of professional and entrepreneurial activity.

The second one is the value-oriented stage of self-determination and self-development, the purpose of which is the formation of a valuable attitude to entrepreneurship and professional activity. At this stage, the ability to work in a team, the desire for business activity, and value orientations in the process of solving business tasks are formed.

The third stage of personal formation as an engineer and entrepreneur involves further self-development, accumulation of experience in business activity, and reflection on strengthening the connection between professional and entrepreneurial competence of future engineers, ensuring assessment and understanding of one's skills, values, attitudes, actions and choices in situations approaching the realities of modern business.

The complex of pedagogical conditions in the proposed structural-functional model includes:

1. formation of motives for the business activity of future engineers through the expansion of the information field of professional and entrepreneurial activity taking into account real market conditions (methods: case studies, game methods, analysis of specially selected texts, brainstorming for solving business tasks);
2. formation of the future engineer's ability to work in a team to solve business tasks (methods: consulting, testing, psychological training);
3. development of the experience of business activity (methods: simulations in the form of a role-playing game; group reflection; solving problems; business games).
4. Figure 1 shows the scheme of implementation of a set of pedagogical conditions for mastering entrepreneurial competence from the standpoint of self-determination and self-development and further personal development of students of education as future specialists in engineering and entrepreneurship.

The developed structural-functional model is characterized by:

- integrity, since the structural components are interconnected and determine the final result - the transition of the future engineer to a higher, qualitatively new level of career self-determination;
- pragmatism, since the developed structural-functional model, is a means of organizing actions aimed at the development of personal self-determination in future managers,
- openness, since this model is part of the system of professional training and entrepreneurial education of future engineers at the university.

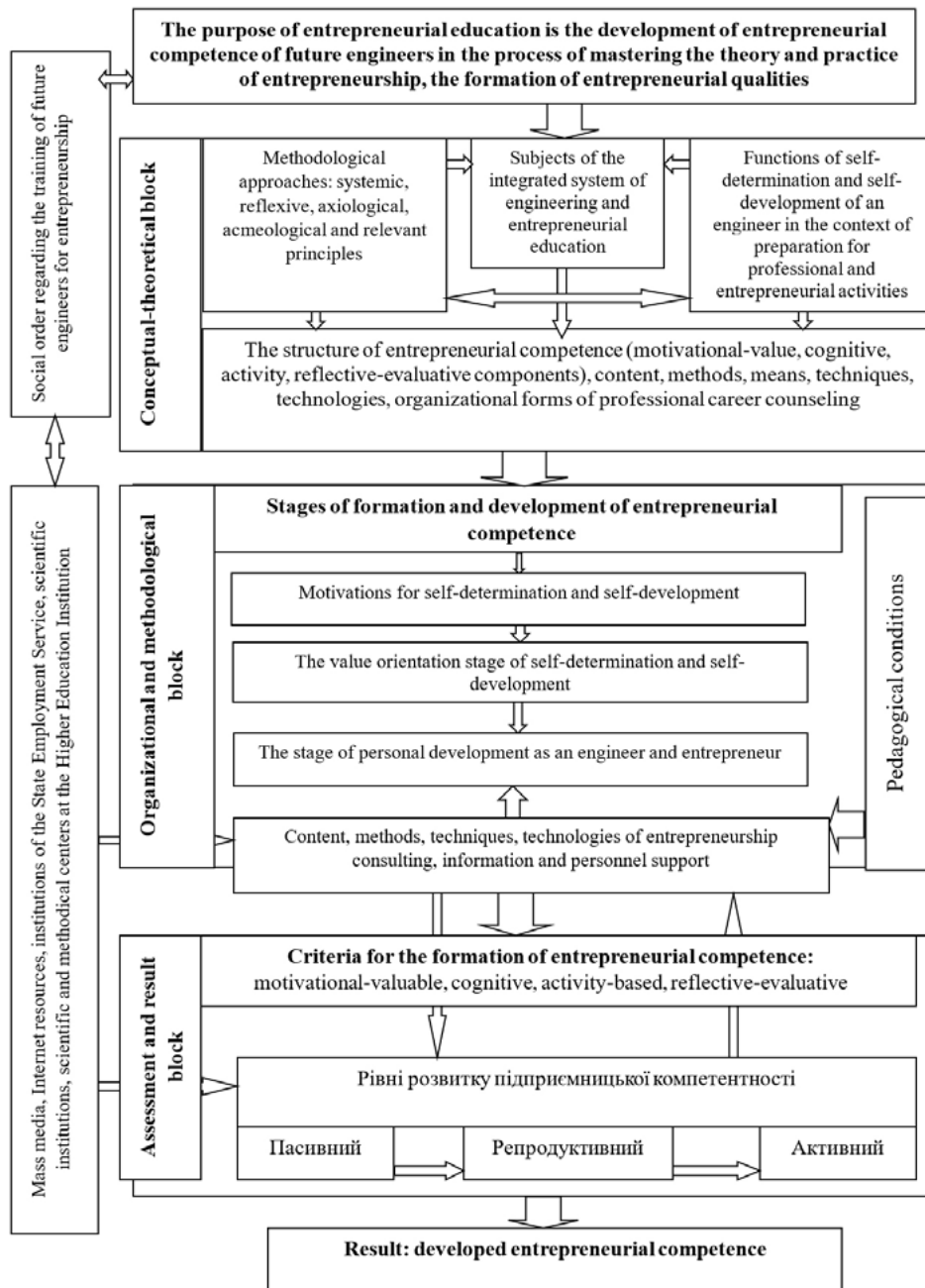


Figure 1. Model of development of entrepreneurial competence of engineers

Discussion

The implementation of a complex of pedagogical conditions allows to purposefully and fully form the motives of self-discovery and self-development in future engineers, their life position, and value orientations of professional and entrepreneurial activity. The purpose of the experimental work was to test the model and the effectiveness of its set of pedagogical conditions for personal and career self-determination of future managers under the conditions of integration of professional and entrepreneurial education.

The analysis of the results obtained at the first stage of the experiment shows that at this stage of the experiment, there is a predominance of a low and medium level of readiness of future engineers for entrepreneurship.

As a result of the research at the second stage, it was proved that the main functions of the model are: self-determination, self-development, self-evaluation, self-discipline, and self-control, the implementation of which is aimed at forming a positive attitude towards oneself and personal development as an engineer and entrepreneur.

The third stage confirmed the key role of counseling at the stage of the student's personal development as an engineer and entrepreneur.

The choice of entrepreneurship consulting strategy is determined by the purpose and tasks of the consultations, the worldview position, and the value beliefs of the teacher who will organize and carry out the consultation. As experience shows, the majority of psychologists-consultants, being supporters of the theory and practice of personally-oriented counseling, consider it insufficient to use only the strategy of help, therefore they suggest using various psychological and pedagogical tools to influence the students of professional education. We draw your attention to the fact that counseling, focused on providing effective individually-oriented help to pupils/student youth, should occupy a significant place in the work of every pedagogue consultant. In this case, we advise you to conduct consultations in the form of an individual interview, conversation, meeting, exchange of ideas, or dialogue with a specialist, a person more competent in matters of entrepreneurship than the person asking for help.

So, to consult means to discuss with a specialist on a certain issue, and to consult means to discuss a problem, and talk about difficult events, complicated circumstances, and facts that worry and stress a person. In addition, consulting means listening to the advice of a qualified specialist and together with him thinking over a certain problem, weighing various ways of solving it, finding the most correct and effective way to solve it, and forming an appropriate position. Such a situation requires the creation of a relationship of absolute trust, confidentiality, and understanding. Counseling psychologists generally recognize that a good relationship is an effective factor in providing the necessary counseling assistance to an individual. At the same time, some authors believe that a good relationship is not only necessary but also a fully sufficient factor for constructive changes to take place in an individual.

We define youth entrepreneurship consulting as a set of procedures aimed at helping solve problems and making decisions about youth entrepreneurship. Consultation can be a one-time meeting with a specialist (teacher, practical psychologist, employer), and a series of such meetings will be an organized consultative process in providing advice

and recommendations on entrepreneurship in general and youth entrepreneurship in particular.

We understand the consulting method as a general scheme formed taking into account the generalized experience of effective consultations of this type, which makes it possible to draw up an appropriate program of action. Taking this into account, we consider it expedient that every teacher of a professional (vocational and technical) education institution should master the methodology, methodological toolkit (methodical base), as well as the methodology and technology of counseling.

The study and generalization of theoretical research and foreign practical experience allow us to position the consulting methodology as a set of methodologically correct directives that define the methods, methods, and techniques of actions aimed at achieving the set goals. In this context, we consider the methodological toolkit (methodological base) as a set of methods that the teacher-consultant has.

Youth entrepreneurship consulting technology, in our opinion, is a set of methods, methods, techniques for transforming the subject of work into a business product using specific technical and software tools in a certain sequence of actions (stages, phases, operations, transitions). Technologies exist in the production, operational, and intellectual activity of a person and are determined both by the adopted methodology and the level of development of labor tools. Today, consulting technologies for youth entrepreneurship are mainly information technologies. They are formed independently by each teacher-consultant. At the same time, we note that in counseling public activists, consultant teachers actively use methods from sociology, psychology, statistics, mathematics, and other sciences, and therefore their content (interviewing, surveying, testing, synthesis, forecasting, observation, group work, business games, expert evaluations, brainstorming, goal tree, graph of problems, etc.) is most fully covered in special literature. As experience shows, consulting is most often carried out in the format of long-term (from several days to several months) consulting projects, and not as providing oral, one-time advice. Sometimes successful joint work with students on the implementation of business projects can become a long-term cooperation and continue in the post-graduation period of the formation of young entrepreneurs.

The consultative process has specific differences and is formed according to the methodological direction or concept chosen by the consultant.

The conceptual goal of organizing youth entrepreneurship counseling in vocational (vocational and technical) education institutions is to create conditions for the formation of a positive attitude of vocational education students towards entrepreneurial activity, stimulating the development of entrepreneurial qualities and entrepreneurial competence.

The professional provision of advisory services must meet certain formal requirements, in particular, the consultant must recommend himself as a specialist in a certain field of entrepreneurship, obtain the express consent of the student of professional education, motivated for entrepreneurial activity, to provide the specified advisory services. Any informal conversations outside of these formal requirements are not considered professional advice.

The youth entrepreneurship counseling process includes three blocks:

1) The conceptual-theoretical block represents the theoretical basis of the youth entrepreneurship counselling process in a professional (vocational-technical) education institution, namely: the basic principles of the functioning of the pedagogical system; theories of professional development and development of entrepreneurial competence of an individual, theories, and principles of youth entrepreneurship consulting; theoretical foundations of the formation of entrepreneurial competence and its structure (value-motivational, cognitive, activity-based, reflective-evaluative components).

2) The methodical and technological block of the model visualizes the method of forming the entrepreneurial competence of vocational education students, specified by appropriate forms, methods, and technologies of youth entrepreneurship consulting. Analysis of research on counselling and problems of youth entrepreneurship development (Bazyl [4, 22], Gura [26], Kaplina [28], Pozhidayeva [32], Pomytkin [29], Shevchenko [35], etc.) gives reasons to consider it as step-by-step process. Each stage has the goal of forming each of the components of entrepreneurial competence, however, at specific stages, tasks related to the formation of certain components prevail.

At the motivational-orientational stage, mainly value-motivational and cognitive components of competence are formed; on the formative level – the activity component of entrepreneurial competence; on the anchoring-prognostic level – the formation of a reflexive-evaluative component of entrepreneurial competence through reflection and self-assessment of the experience gained at previous stages, determination of new goals for the development of entrepreneurial competence in the process of consulting on youth entrepreneurship, ways of achieving them and practical actions for their implementation.

Psychological and pedagogical support for fostering entrepreneurial competence among vocational education students constitutes a crucial component of their educational journey. Given that professional education directly aligns with the aspirations and ambitions of young individuals, most students are motivated to pursue an education that can serve as a foundation for their professional and entrepreneurial endeavours.

In line with this approach, psychological and pedagogical support aimed at raising awareness of the benefits of a business career within the professional education system encompasses a wide array of services. These services can be provided by teaching staff as well as experienced specialists in youth entrepreneurship, all within the framework of the „education for lifelong career” paradigm. Within vocational education institutions, it is advisable to implement four main approaches to delivering such support:

- Courses, lectures, seminars, projects, and other educational activities are structured to delve into the nuances of professional and entrepreneurial competence development.
- Small group consultations addressing various aspects of youth entrepreneurship.
- Individual counselling is tailored to the specific needs and aspirations of each student.
- Training programs are designed to prepare students for engagement in youth entrepreneurship and the establishment of new ventures.

The organizational and thematic framework for youth entrepreneurship counselling in higher education institutions can be materialized through the establishment of Career and Entrepreneurship Centres. These centres serve as dedicated units with the primary objective of offering comprehensive support to graduates regarding career development. They provide services and programs aimed at planning and cultivating entrepreneurial qualities, thus aiding graduates in achieving their career objectives. Additionally, Career and Entrepreneurship Centres serve as a vital link between educational institutions and the business community, fostering collaboration and synergy between academia and industry.

3) The evaluation-results block delineates the criteria and level of entrepreneurial competence formation among vocational education students. This facilitates the assessment of the pedagogical effectiveness of the youth entrepreneurship counselling system at the institutional level.

During the implementation of the presented model, it was observed that among the various forms and methods of entrepreneurial education, entrepreneurship consulting emerged as one of the most effective yet underexplored approaches. It's worth noting that consulting is an integral component of the professional orientation system. It considers the physical and psychological traits of the individual, their general and professional interests, inclinations, abilities, and training, as well as medical and psychological prerequisites for the respective profession. Additionally, it incorporates summarized data on labour force demand, employment opportunities, and training in specific professions and specialties.

Conclusion

The modern period of social development presents new challenges that traditional education no longer adequately addresses. There is a shift from the authoritarian, reproductive paradigm that underpins the knowledge system of education to a new educational paradigm suited for the era. This new paradigm focuses on cultivating a new system of values in young people and fostering new teacher-student relationships characterized by mutual respect, where the teacher serves as a guide and consultant rather than a mere instructor. According to this new paradigm, teachers should motivate learning and help students update their value systems. Educators are tasked with moving away from technocratic approaches to education and instead providing the educational process with new humanistic methods.

The new paradigm considers the modern needs of society, as well as the conditions of martial law and the post-war reconstruction of Ukraine's economy. In the realm of professional education, the new paradigm helps students realize that entrepreneurship is not just a means to earn money but also an opportunity to contribute to societal development. An entrepreneur is seen as an energetic and proactive individual, a generator of new ideas capable of organizing their implementation and achieving success in business ventures. Our conception of youth entrepreneurship is founded on this principle – as a means to increase youth employment levels, establish new enterprises, and create additional jobs.

According to the new paradigm, the goal of entrepreneurial education is to develop the entrepreneurial competence of future engineers while also fostering entrepreneurial qualities. Entrepreneurship education programs align with the basic principles of the new paradigm if they incorporate at least two of the following elements:

1. The development of personal qualities and universally accepted (horizontal) skills are indicative of entrepreneurial thinking and behaviour.
2. Increasing awareness among vocational education seekers about self-employment and career growth opportunities in entrepreneurship.
3. Engagement in business projects and management of mini-companies.
4. Acquisition of specific business skills and knowledge on how to initiate and successfully develop a business.

Business programs and modules provide students in professional education with tools that contribute to the cultivation of creative thinking, effective problem-solving abilities, objective analysis of business ideas, and communication skills with partners. Additionally, they facilitate the creation of networks, project management, and evaluation skills. Applicants feel more confident in designing their business ventures when they have the opportunity to test their ideas within an educational environment. The benefits of entrepreneurial education extend beyond fostering start-ups, designing innovative enterprises, and creating new jobs. The primary objective is to instil and nurture entrepreneurship in every future professional. However, this does not imply that the aim is to turn every applicant into an entrepreneur. Such a goal is both unrealistic and unnecessary. Instead, entrepreneurship developed within vocational education institutions becomes a characteristic feature of every graduate, reflecting their business acumen, initiative, creativity, self-confidence, and other entrepreneurial qualities.

A defining trait of a modern young entrepreneur is their approach to entrepreneurship in the contemporary sense of the term. In the era of knowledge, entrepreneurship entails the ability to translate ideas into action. It involves possessing an entrepreneurial mindset, fostering innovation and risk-taking, and demonstrating proficiency in planning and managing projects to achieve desired outcomes.

In today's business landscape, employers ideally seek individuals who, upon receiving professional education, bring not only instructions on how to perform tasks but also proposals on enhancing production, even within a specific work environment, and strategies for achieving success. In essence, they seek employees with a business-oriented mindset. Such individuals are poised for successful careers in line with the new paradigm of the information age and digitalization.

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KSZTAŁCENIE PRZEDSIĘBIORCZOŚCI Z PERSPEKTYWY SAMOSTANOWIENIA I SAMOROZWOJU PRZYSZŁEGO INŻYNIERA

STRESZCZENIE

W artykule przedstawiono wyniki badań, dotyczących wpływu edukacji w zakresie przedsiębiorczości na kształtowanie się cech przedsiębiorczych u przyszłych inżynierów, poprzez samostanowienie osobiste i samorozwój zawodowy. Podkreślono możliwości integracji profesjonalnego kształcenia inżynierskiego z przygotowaniem przedsiębiorczym. Wyjaśniono rolę i znaczenie motywacji i działalności przedsiębiorczej wśród przyszłych inżynierów. Doprecyzowano pojęcia „samostanowienia”, „rozwoju” i „samorozwoju” dla przyszłych inżynierów. Udowodniono, że indywidualne samostanowienie i motywacja do integracyjnego samorozwoju odgrywają decydującą rolę w kształceniu specjalisty, zarówno jako inżyniera, jak i przedsiębiorcy. Wdrożenie wyników badań podniesie efektywność nauczania przedsiębiorczości i pobudzi samorozwój przedsiębiorczości, wzbudzając w przyszłych inżynierach chęć aktywnego uczestniczenia w rozwoju społeczno-gospodarczym państwa.

Celem badania jest określenie specyficznego wpływu edukacji w zakresie przedsiębiorczości (w tym programów, metod i technologii, treści i form) na kształtowanie się cech przedsiębiorczych u przyszłych inżynierów z punktu widzenia samostanowienia i w zależności od poziomu integracji samorozwoju. W badaniu wykorzystano metody teoretyczne, takie jak analiza literatury naukowej, uogólnienie otrzymanych informacji, analiza systemowa i interpretacja danych empirycznych, oraz metody empiryczne, w tym metody diagnostyczne i metody statystyki matematycznej.

SŁOWA KLUCZOWE

inżynier, samostanowienie, samorozwój, przedsiębiorczość, kariera, biznesplan, wolność gospodarcza.



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