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NON-FORMAL EDUCATION IN THE CONTEXT OF MODERN TRENDS

Abstract

In the modern world, specialists' success depends on their ability to adapt to rapidly changing conditions in their lives and professional activities. Non-formal education is one of the ways to adjust educational trajectories to ensure continuous and flexible development tailored to learners' individual needs and interests. This paper describes the findings of a study on the non-formal education model in higher education institutions. The study aims to develop a non-formal education model considering a three-element interaction: student, university, and external environment. Analytical and statistical information processing methods were used to review references and determine the needs of internal and external non-formal education consumers. The study's findings justify the integration of non-formal education concepts into a traditional education system, that is, ensuring free academic activity, expanding learning options and trajectories, personal development, and forming a constantly growing need for acquiring knowledge and new competencies. Another result of the study is the identification of the key elements of non-formal education and the possibilities for its integration into the higher education system. The map of requests of each educational process participant has been made and some ways of non-formal education implementation have been shown in the example of NPJSC D. Serikbayev East Kazakhstan Technical University experience. The scientific and practical significance of the paper lies in a comprehensive overview of non-formal education scientific and educational potential, and a presentation of mechanisms for creating an educational environment to facilitate learners' self-organization and self-development.

Keywords: non-formal education, competencies and skills, self-education, personal development, motivating environment, flexible educational trajectories.

Basic provisions. Non-formal education is becoming increasingly popular in modern society attracting both students and teachers due to its flexibility, accessibility, and responsiveness to changing educational needs. The paper presents a three-element non-formal education model which includes a student, a university, and an educational environment. Each of these elements has been described with practical examples based on D. Serikbayev East Kazakhstan Technical University experience. A student represents an active educational process participant who has unique needs, interests, and goals. A university shows an educational institution's role in providing quality, diverse, and accessible education. Educational environment includes physical, social, and cultural environment and society.

Introduction. For a long time, the concept of education was associated exclusively with institutions (schools, universities) that provide a wide range of basic scientific knowledge and skills for a future profession. However, in the 21st century, the content field of education concept has expanded significantly and its contextual meaning has changed. This was caused by the emergence of models described as formal, non-formal, and informal education. Why did alternative forms of education emerge? What processes caused their emergence, discussion, and implementation? These questions can be answered by tracing the logic of modern society's socio-economic development, highlighting challenges posed by technological boom, digitalization, humanization, and other processes that are the modern world's characteristic features.

A dynamically developing economy is transforming the labour market and imposing new and increasingly diverse requirements on specialists. To succeed in a professional environment, it is no longer enough to know in a particular field, skills of effective business communication and forecasting, and decision-making skills. Today, it is important to be flexible, socio-culturally competent, civically engaged, emotionally expressive, and adequately responsive to society's demands.

Education organizations and, first of all, higher education institutions face the issue of revising academic policies and reformatting educational process content in connection with the expansion of future specialist's functionality. The interaction and interdependence of different forms of education are becoming more and more important to increase the pedagogical and scientific-innovative potential of education which develops learners socially and individually. Undoubtedly, traditional (formal) education is crucial for forming a personality. At the same time, social and cultural development diversifies non-traditional (non-formal) education forms.

The concepts and terminology used in the paper refer to the International Standard Classification in Education (ISCED) developed by the Institute of Statistics at UNESCO (ISCED, 2013). According to this classification, the following types/forms of education are distinguished.

Formal or institutionalized education is education that is purposefully planned with the participation of government institutions. All aspects of formal education subjects' activities are recognized as standard from the point of view of their implementation at schools and universities in a particular country. In such education, there are well-established mechanisms for interaction between an educator and a learner, the continuity of transition from one education fragment to another, and clear regulation of each step on the way to a specialist's entry into the labour market. Formal education participants are not only educational institutions with their educators and learners but also employers and specialists who already have experience in a certain field. In this case,

formal education also includes professional development training and retraining programs the final result of which (certificate, diploma) is recognized by government agencies and other educational institutions (ISCED, 2013).

Informal education/learning is education that is not institutionalized. It means that state institutions are not directly involved in its implementation. This form of education does not imply the availability of a structured curriculum or planning. Learning is intentional for learners as they decide to get educated by reading books and journals, watching educational movies, working with Internet sources, etc. Informal education must be a form of education because learners realize that the ultimate goal of such activities is their self-education (ISCED, 2013). Informal education has less organized and structured forms, is more focused on learners' personal needs, and is determined by educational activities in their everyday lives, and communication with colleagues and society when they interact with information content (Staus et al., 2021). Such education is simultaneous to learners' main activities, accompanies them at different moments of their lives and often is not perceived as education in its pure form.

Non-formal education (which receives the most attention in the above classification) is education which, on the one hand, belongs to public and private institutions, and on the other hand, is an additional, alternative option that offers learners a life-long expansion of their educational trajectories. Such education has well-developed programs, is organized in short periods, and is provided as courses, seminars, trainings, workshops, master classes, etc. The documents obtained through non-formal education programs are not often universally recognized at the state level, but they are recognized by employers as documents of their employees' professional development and growth (ISCED, 2013).

Thus, formal, informal, and non-formal education are different paths that lead to similar results: forming a well-educated person who is in demand in the labour market. In formal education, this path is structured and has rigid frameworks, in non-formal education this path

is formed by immersion in a certain educational environment based on practical experience. Both of these forms of education are intentional for learners: they know, why and how to learn. The path of informal education provides opportunities to learn something new without realizing the process of learning. In any case, these forms of education shape social mobility and motivate learners' self-improvement and self-development (Kalashnikova, 2019).

Materials and Methods. The Institute of Statistics at UNESCO has provided a transparent

and clear framework for understanding these three forms of education. A more detailed description of each form as well as their advantages and disadvantages can be found in scientific publications (Harris & Wihak, Whack; Johnson & Majewska, 2022; Alnajjar & Abdulhalim 2021; Allaste et al., 2022; Filippoupoliti & Koliopoulos, 2014).

For the sake of clarity, let us reflect the essence of these papers in a table that summarizes various features attributed to each form/model of education (Table 1).

Table 1. Main characteristics of formal, non-formal, and informal education

Main characteristics	Formal education	Non-formal education	Informal education
Educational environment	Public education institutions Private education institutions Employers	Public education institutions Private education institutions Employers	Outside of public or private education institutions Daily life On-the-job training
Educational processes	Structured processes Description of all processes in regulatory documents Time regulations	Structured processes Description of all processes in regulatory documents Time regulations	Spontaneity Driven by consumer needs Lack of time regulations
Education participants	An employee of a public/private educational organization - a learner An employer - a student	An employee of a training organization – a trainee A trainer - a trainee	Colleagues - a person interested in information A competent person - a person interested in information
Sources of education	Educational and scientific literature	Course/seminar/training materials	Books, audio and video materials, everyday life experience
Learning outcomes	Diploma of Education (state level)	Certificate	Not certified acquired knowledge

This table shows the intersection points of formal and non-formal education: one educational space and similar educational processes. The similarity of these education models determines some difficulties in their identification: which forms of educational services provision should be considered as formal and which as non-formal. Let us present a more in-depth view of non-formal education based on current scientific literature corpus analysis.

First, let us consider what is included in the non-formal education concept. Non-formal education is an activity organized in content and structure and does not necessarily coincide with the main program of an educational institution.

It's aimed at realizing learners' educational needs, provides real practice-oriented learning, and offers variability and flexibility of educational processes (including the choice of place and time of learning). Non-formal educational programs are often considered along with the concepts of continuing education, additional education, and self-education to describe the modern world realities where the process of acquiring new knowledge and skills accompanies learners throughout their lives taking a variety of forms (Pereira & Ortiz, 2022; Flerov, 2022).

Non-formal education is provided primarily by learning centers, clubs, and circles both at schools and universities and in external public

and private organizations. The main forms of non-formal education implementation are online courses and professional development courses; thematic seminars, trainings, and master classes; webinars and podcasts; hobby clubs, sports sections, and artistic circles. Non-formal education plays an important role in training those who do not have an opportunity to receive traditional education and those who need to acquire additional competencies for real employment, the emergence of new professional opportunities, and increasing labour mobility. Large enterprises and small firms also use non-formal education principles to improve their employees' qualifications and their retraining (Short-Meyerson, Sandrin & Jimenez-Silva, 2024; Młynarczuk-Sokołowska, 2022; Badger, 2021; Simac et al., 2021; Alon et al., 2015; Beddie & Halliday-Wynes, 2010).

The increasing significance of non-formal education is attributed to the digital revolution which has provided access to open educational resources and massive online courses (Sarsembaeva, et al., 2023). So far, non-formal education is often interpreted as e-learning and distance learning (Liao et al., 2023; Atabekova et al., 2015).

Publications review also allowed us to notice that non-formal education has the opportunity to solve many current social and economic problems. Non-formal education principles help, for example, refugee children to adapt to a new way of life and a new environment: "non-formal education plays a vital role in providing active and responsive citizens, enabling people to learn from others by asking questions, exchanging views, preparing for actions that refugee children need to free themselves from their vulnerabilities" (Zakir, 2023).

The practical system of non-formal education has been initiated by a range of social problems that have determined the need for interaction between public and private educational structures and the population. There was a need for such an educational organization that could fully use students' potential and form their self-improvement skills. Non-formal education also makes it possible to expand learners' rights and opportunities, to involve even declassified strata

of the population in education. As an example, the experience of organizing creative music education for neglected children shows how to include in society those social strata which, on the one hand, experience everyday difficulties, on the other hand, can bring destructive moments in the life of whole society. The functioning of Roemah Musik Harry Roesl art venue which provides music programs for street children in Indonesia brings us closer to solving this social problem, initiating creative efforts to introduce forms of non-formal education in the context of people's empowerment (Purwanti & Widiastuti, 2015).

Non-formal education is also used to foster environmental and ecological thinking. In Ethiopia, there is a project aimed at empowering rural people. The ideas of non-formal education have been realized in the form of project-based learning of skills and knowledge that will help to implement environmental projects, strengthen community participation in improving environmental quality, and improve environmental performance and farming practices (Zikargae et al., 2022). Studies and projects in Malaysia also address the same topic: non-formal environmental education among adults are campaigns to raise public awareness of existing problems and solutions in the form of environmental talks, exhibitions, seminars, workshops, congresses, and outdoor activities (Hassan et al., 2009).

In Malaysia, non-formal education has also been used to build linguistic diversity in schools by organizing language activities outside the school: using the resources of television, game consoles, and computers. Children who participated in these programs adapted more easily to life in a different country, society, and culture (Yamat, 2010).

Another social problem that can also be solved using non-formal education is the problem of employment and unemployment. Macedonian experience shows that involvement of non-governmental organizations in supporting the formal education system provides a kind of "added value" to education services because in this case, the education system has the opportunity to diversify education programs'

content as much as possible and thus to impact different categories of learners (Abdullai et al., 2012).

Inclusion in education, as all society members are involved in educational processes taking into account the diversity of needs, opportunities, and peculiarities, also uses non-formal education principles and mechanisms; social inclusion models are built on their basis, pedagogical conditions are created for adaptation of students with special physical and mental abilities to life, and communication in the society (Popova et al., 2020).

Thus, on the one hand, scientific papers of the last ten years consider non-formal education as a key to overcoming the socio-economic and cultural crises of modern society; on the other hand, they describe non-formal education as a way to build a continuous professional education. The existing large corpus of papers on non-formal education pays less attention to a comprehensive consideration of the above-mentioned non-formal education components and the development of its holistic model. The above-mentioned papers are valuable as a demonstration of real experience in solving specific problems of society. However, these scientific experience fragments have not made a full picture reflecting non-formal education structural and content characteristics yet. We believe that non-formal education, to differ from formal education, should be a synthesis of learners' interests and demands, strategic goals of educational institutions, and external environment that helps to diversify offered services and deepen program content.

Results. The study is based on the definition of an aim, an object, a subject, and objectives. An analytical review of modern scientific discourse on the defined study subject allowed us to outline the essence of non-formal education, demonstrate the diversity of options for its implementation in different countries, and identify the social orientation of non-formal education initiatives. Scientific articles, educational organizations' websites, and regulatory documents have been studied. A practical part included building a three-element non-formal education model, analysing the

results of a questionnaire survey for non-formal education participants, discussing these results, and further developing recommendations and study outcomes. The data collection method through questionnaires was used to build a map of non-formal education consumers' requests. The statistics were analyzed by descriptive analysis. The questionnaire recipients were students, Master's Degree and PhD. students at EKTU (300 people) as well as 50 public and private educational organizations.

In this article, non-formal education is considered a system consisting of three fundamental elements: a student, a university, and an environment. This approach is quite innovative as, on the one hand, it fits non-formal education into formal education mechanisms; on the other hand, it provides a systematic and consistent strategic planning and implementation of this model. The non-formal education model is described in the example of NPJSC's East Kazakhstan Technical University experience (hereinafter referred to as EKTU) which is currently implementing this model in its educational process.

Now, the study will focus on each element of this non-formal education model/system.

Students are the main consumers of an educational product. Modern market trends emphasize the importance of such an aspect as human freedom in continuous learning, promoting and strengthening such human values as ethics, emotions, and confidence in one's social status which characterizes human culture as such. A triad of learners' needs which determine the necessity to introduce non-formal education into the general system of the academy emerges.

Educational needs are a quick and accessible learning process; acquisition of practical experience corresponding to the demands of industry, economy, and culture; adaptation of the education system to digital and humanitarian challenges; employment; and effective professional work.

Social needs are interpersonal communication (student to student, student/participant to teacher/trainer); intercultural communication; team membership awareness; confidence in

one's role in the team; satisfaction with work and professional performance; and career building.

Personality needs are a sense of security, physical and mental well-being, social group support; opportunity for self-realization; desire for creativity, and self-expression.

Undoubtedly, a part of these needs is provided by traditional education which forms a set of reliable fundamental knowledge, practical training for future professional work, intercultural and social communication skills, and research competencies. However, modern students are people of a new formation who have access to a huge amount of diverse educational and non-educational content, strive to be pragmatic about their learning experiences, and competently form their trajectories of education and personal development. They are active in social life and creativity and can properly set their priorities. It is no longer enough for them to only attend lectures and practical classes to consider themselves educated people. The modern world's energy and resources stimulate creative realization and social competencies development.

EKTU students are ready to supplement their main educational process with additional programs and courses. This is confirmed by the results of the questionnaire survey, in which 330 respondents took part: Bachelor's, Master's, and Ph.D. degrees students.

The study presents some data obtained from the questionnaire in this article.

The majority of the respondents feel the need to develop their economic and digital literacy and creative thinking. This choice was quite predictable since the modern media sphere actively promotes the values of market relations: the ability to earn money, the ability to think outside the box in problem-solving, and to be mobile in the use of technology (Seyitkazi & Irimbaeva, 2022). However, some students would like to express themselves not in their educational experience, but in their creativity (singing, dancing) and sports (self-defense, combat sports).

On the student's part, non-formal education is of interest as a more flexible and adaptable

to their needs form of knowledge acquisition. They are attracted by the availability of online courses, short-term seminars and training, and the opportunity to unlock their creative potential. For many people, an undoubted advantage of participation in non-formal education is the possibility of re-crediting course certificates from their main curriculum. So, the first element of the non-formal education model - students with their needs and interests - is the starting point, the developed model foundation.

Satisfying students' social and educational needs enriches the process of their interaction with society and the economic sphere. Immersion in universal human values, foreign languages, culture, and innovative technologies forms functional, cultural, and emotional literacy of future specialists in various fields.

To fulfil the formulated students' needs, the next element of the non-formal education model – a university - must be a flexible structure with a good material and technical base, professional staff, progressive attitude to academic processes and their content, strong partnership with government and production structures.

Regarding the university's material and technical base for non-formal education, attention should be focused, first of all, on the information component: a well-designed and structured Learning management system (LMS), strong digital technologies that allow organizing mobile learning, using cloud capabilities and gamification; a serious base of advanced online courses created by university teachers; the possibility of joining mass open courses through agreements and licensing, etc.

Thus, EKTU was one of the first universities in Kazakhstan to develop its educational portal. The portal developers follow all innovations and expand and deepen their capabilities. One of the latest implementations was the creation of a digital learner's profile which tracks a student's academic and extracurricular achievements, reflects what competencies and how they are manifested during training, and records the results.

Another strength of the EKTU digital system is the portfolio of online courses developed by a team of university teachers in Kazakh,

English, and Russian. These are 32 courses in such general and specialized disciplines as the History of Kazakhstan, Culture Studies, the English and the Russian languages, Engineering Mechanics, Merchandising, Cloud Computing, Research Organization and Planning, Information Communication Technology, Fundamentals of Geology, Renewable Energy, Road Maintenance, Cartography, etc., as well as several other courses. The online courses are hosted on an open platform at <https://open.ektu.kz>. Since 2021, 837 students have mastered one or another discipline through online courses. EKTU also has 1,500 licenses for educational content on the Coursera platform. So far, 1000 licenses have already been completed by the university students and certificates have been re-credited in various disciplines of EKTU courses.

Another important role of the university in the formation of non-formal education values is to motivate students to self-education and to form a constantly growing need for continuous learning. Motivation is crucial in this approach to non-formal education. The university can and must provide a motivating environment in which students can constantly learn something. One of the options for creating a motivating environment is a university network of clubs and circles, laboratories, and technology centers.

Clubs/circles / creative groups/sports sections are forms of student interaction with each other and with their tutors/teachers/university staff; these forms socialize participants, improve their communication skills, intercultural competence, and team cooperation opening up their inner potential. Speaking widely and specifically, they satisfy students' need to create. This format of student community suggests different subjects, forms of communication, and activities. A university that offers different options of a creative environment contributes to students' future fulfilment success. Students involved in club activities get a confident self-esteem, a sense of belonging to the university activities, and satisfaction from the implementation of important social and environmental projects in addition to their acquired competencies. Students can

gain and develop additional competencies and master working professions in scientific centers and laboratories which will expand their employment and career opportunities. It is worth noting that students who participate in non-formal learning show good results in their main educational activities as well. This proves that a motivating environment has a beneficial effect on self-organization and the desire to acquire new knowledge (Tang & Zhang, 2020). Thus, a university as an element of a non-formal education system provides a motivating component on the one hand and a component that satisfies this motivation on the other hand.

The third element of the non-formal education system is the external environment. The external environment in this case means both governmental, non-governmental, and private organizations the activities of which are related to personal development: educational, cultural, creative, and sports activities. This element of the system is the most undeveloped in current conditions: there is no comprehensive, transparent, understandable, and logically structured legal framework that would regulate and coordinate all options for cooperation between the university and its partners to implement non-formal education. As a result, programs and courses are duplicated, educational content is detached from learners' real needs, and traditionally popular and demanded courses and training like languages and IT prevail.

Another problem is to establish effective and productive relations between the university and external organizations. State-run education organizations are often oriented on traditional formats of interaction, and private organizations do not consider it worthwhile to cooperate with the university, as they put financial objectives as their main priority. This opinion is based on the analysis of the educational environment in Ust-Kamenogorsk for possible cooperation options in non-formal education: only 4 organizations (three public and one private) out of 50 organizations that were of interest for our study were willing to cooperate with the university in course preparation, experience sharing and holding events.

In this case, the university’s task is to build effective partnership mechanisms that allow filling university programs and courses with real experience, non-standard approach, and creative implementation, as well as to increase the number of communication options with professional communities. It is this direction of university activities that requires updating and diversification, and this will be the subject of our further research.

As we can see, each element of the non-formal education model determines both organizational mechanisms and the content of the model itself (see Figure 2).

To make non-formal education a working model that brings real positive results, it is necessary to take into account the requests of all those interested in this process, to have strong partnerships with the state and private sector, a strong academic base, and creative teachers.

Table 2. Map of non-formal education participants’ requests

Student	University	Environment
<ul style="list-style-type: none"> • acquisition of knowledge and competencies: foreign languages, creative thinking, economic literacy, digital literacy, sports, dancing, singing, psychology • flexible educational process: opportunity to obtain new knowledge and additional competencies not directly related to education program; opportunity to re-credit certificates of language examinations (IELTS, TOEFL, Kaztest) at the university; opportunity to re-credit courses taken other than at the university. 	<ul style="list-style-type: none"> • organizational requests: re-crediting of education outcomes; increasing the number of students enrolled in non-formal education; creating an educational environment that encourages students self-education and forms self-organization skills of educational activities • infrastructure requests: In-house online courses and programs; network of clubs, sections and circles; laboratories and centers of competence • external requests: Networking with organizations offering personal development service 	<ul style="list-style-type: none"> • partnership requests: Involvement of EKTU staff to conduct courses / seminars / trainings; involvement of organization’s staff to conduct courses / seminars / trainings for EKTU students • organizational requests: development of joint courses / seminars / trainings; sharing already existing courses / seminars / trainings • financial requests: attracting more customers

Thus, we have shown the model of non-formal education as a synergy of such components as students, university, and environment. This approach allows building a model based on the goals and objectives essential for each component; it identifies problem areas and emphasizes more effective ways of non-formal education development and implementation.

Discussion. Non-formal education is education that offers learners additional programs that aim to develop a wide range of competencies and meet personal development needs. Such programs are implemented through courses, seminars, trainings, master classes, etc.

The available studies on non-formal education issues describe, first of all, the social effect that such education can provide (Abdullai et al., 2012; Yamat, 2010; Zakir, 2023; Zikargae et al., 2022). At the same time, there are almost no papers that describe the paradigm of step-by-step non-formal education development and implementation. Most of the papers focus

on the study of separate areas of non-formal education.

Findings obtained in the course of development of the three-part non-formal education model are consistently in line with the existing studies (Harris & Whack, 2018; Johnson & Majewska, 2022;). However, the difference of the proposed study is that the elements of the model (student - university - external environment) are considered as a whole, while the above-mentioned works emphasize one of these aspects. There is an extensive mosaic of non-formal education issues in the scientific community which made it possible to develop this model.

Today, students who think about their future careers strive to acquire relevant competencies and unlock their creative potential. The demand for non-formal education among young people is quite high. However, in the modern education system of Kazakhstan, there are no clear and transparent mechanisms to involve students in

non-formal education. To solve this problem, it is necessary to implement such a model of non-formal education which ensures the interconnectedness of all participants: students, universities, and external organizations that provide educational services.

Students' needs in non-formal education identified in the study indicate modern trends in the development of society, economy, and culture. To meet these needs, the university should create an educational environment that motivates students to continue self-development. The development of non-formal education courses and programs, the promotion of club activities, on the one hand, and the implementation of partnerships with external organizations, on the other hand, are important aspects of non-formal education implementation.

The non-formal education model developed in the proposed study reflects the challenges facing the modern academy; it shows interested participants as elements of a unified system through its three-element structure; it structures and organizes the ways of implementing non-formal education into activities of any organization.

The issue of effective recognition of non-formal education outcomes requires further elaboration: rules developed in Kazakhstan's legal field are focused on the assessment of content-based compliance of obtained learning outcomes which is not always possible to perform unambiguously. To become viable, non-formal education should be integrated into the national qualification framework, which has not been elaborated at present either (Harris & Whack, 2018; Souto-Otero, 2021).

Conclusion. The widespread of non-formal education ideas and principles and their acceptance by a growing number of higher education institutions indicate that this

concept is relevant, it reflects the stage of the entire education system transformation. Non-formal education expands the boundaries of education itself and cultivates knowledge and practical experience. The ultimate goal of non-formal education is personal growth, and personal reformation through participation in any activities that go beyond the set of formal education rules. To understand the paradigmatic basis of this concept, we have conducted a review of relevant papers which allowed us to formulate the following advantages of non-formal education: an opportunity to tailor one's educational path; a wide range of tools to diversify the ways and means of education for all categories of learners and those willing to learn; the opportunity to build a lifelong learning strategy; the availability of educational programs and courses including through distance learning and inclusion. The three-element non-formal education model (student - university - environment) has been formulated and each component of this model has been characterized with practical illustrations of ideas on the example of the EKTU experience. Non-formal education with a goal-oriented approach to each fragment of educational activities promotes the principles of free access to information, expansion of students' communication field, and revealing of personal potential, and thus, it expands the rights of modern people. Universities have great potential to shape these rights, as they can offer non-formal education and create a motivating environment for continuous development and growth.

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