ISSN 2413-5488
ИНДЕКС 76088

ҒЫЛЫМИ-АНАЛИТИКАЛЫҚ ЖУРНАЛ
НАУЧНО-АНАЛИТИЧЕСКИЙ ЖУРНАЛ
SCIENTIFIC AND ANALYTICAL JOURNAL

ҚАЗАҚСТАННЫҢ ЖОҒАРЫ МЕКТЕБІ
ВЫСШАЯ ШКОЛА КАЗАХСТАНА
HIGHER EDUCATION IN KAZAKHSTAN

№4 (48) / 2024

ЖЫЛЫНА 4 РЕТ ШЫҒАРЫЛАДЫ
ВЫПУСКАЕТСЯ 4 РАЗА В ГОД
PUBLISHED 4 TIMES A YEAR

2013 ЖЫЛДАН БАСТАП ШЫҒАДЫ
ИЗДАЕТСЯ С 2013 г.
FOUNDED SINCE 2013

Астана, 2024 жыл

HIGHER EDUCATION IN KAZAKHSTAN

SCIENTIFIC AND ANALYTICAL JOURNAL

№4 (48) / 2024
FOUNDED SINCE 2013

The owner:
Higher Education Development National Center MSHE RK of the Republic of Kazakhstan

Certificate No. 15650-Ж of November 5, 2015 on registration, rediscount of periodical printed publication and informational agencies of the Committee for Communication, Informatization and Information of the Ministry for Investments and Development of the Republic of Kazakhstan (primary registration – Certificate No. 13306-Ж of January 25, 2013).

The journal is included in the List of publications recommended by the Science and Higher Education Quality Assurance Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan for the publication of the main results of scientific activity (Order No. 374 of March 26, 2024)

Signed for publication 27.10.2024.

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DOI:10.59787/2413-5488-2024-48-4-6-16

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ISSUES OF TEACHERS' PROFESSIONAL DEVELOPMENT IN THE WORKS OF MODERN RESEARCHERS

Abstract: This article attempts to assess the current state of scientific understanding and the main trends and directions of research in the field of teachers' professional development. As a result of the study of databases of peer-reviewed scientific publications such as Web of Science, Scopus and EBSCO, as well as the works of domestic researchers, new approaches, methodologies and best practices in the field of teacher professional development were identified. The research allowed us to formulate the main provisions of organizing effective forms of teacher training that contribute to teachers' professional development.

Keywords: teacher, educational process, updated content of education, quality of education, methods and strategies of activity, professional development, advanced training.

Introduction

In 2021, Kazakhstan completed a total renewal of school education. The Organization for Economic Cooperation and Development views this renewal as a positive step towards modernizing the education system as a whole. The Concept of Development of Preschool, Secondary, Technical and Vocational Education of the Republic of Kazakhstan for 2023-2029 notes that the content of education fully reflects "the knowledge, skills, attitudes and values required by 21st century learners in accordance with national priorities, as well as the challenges and opportunities of a rapidly changing world". It is actualized the continuation of work to improve the content of secondary education "on the basis of value-oriented, activity-oriented, personality-oriented and communicative approaches", to ensure compliance of "modern pedagogical theory and practice with the level of requirements imposed on the sphere of education by the processes of economic, socio-political, scientific and technological development" (Concept, 2023).

Further development of the education system requires a resource in the form of qualified and motivated personnel. The Law of the Republic of Kazakhstan "On the Status of the Teacher" promoted the introduction of a set of systemic initiatives aimed at creating a supportive environment for teachers and encouraging their professional development. At the same time, in the context of improving the status of teachers, improving the quality of education in general, it is required to address the problems associated, first, with "the insufficient level of professional competencies and professional development of teachers", and second, with "the insufficient level of qualification of teachers on the development of IT-competencies, emotional intelligence, lesson study, research in action, critical thinking, time management, working with children of special educational needs" (Law, 2019).

The effectiveness of a modern teacher's work is determined by his or her inclusion in professional development programs as a conscious activity aimed at improving the quality and scope of knowledge, skills and abilities. Inclusion of a teacher in formal, non-formal and informal education programs is considered as a way of professional development of a teacher. This determines the relevance of our research on "Issues of teachers' professional development in the works of modern researchers as a basis for finding effective forms of their education", the results of which are reflected in this article.

The purpose of the study is to analyze the works of modern researchers in the field of teachers' professional development and to identify the most effective forms of teachers' professional development.

In order to achieve the formulated goal, the task of reviewing the existing works of modern researchers in the field of teachers' professional development is defined to understand the current state of knowledge in the field of teachers' professional development, to identify the main trends and directions of research.

Research methodology and methods

According to the research methodology on the problem of professional development, we organized a review of existing works of modern researchers based on the analysis and critical thinking of existing publications. The review of works is aimed at understanding the current state of knowledge in the field of teachers' professional development, identifying gaps in research, as well as identifying theoretical and practical grounds for further research into the issues of organizing non-formal education of teachers.

Thus, the purpose of the organized review is to clarify the categories of "teacher professional development", "professional development", as well as to identify effective methods and approaches to improve their professional development based on the analysis of existing international and domestic publications on this problem.

The key databases and academic resources we used for the literature search were Web of Science, Scopus, and EBSCO search engines, which allowed us to identify relevant and authoritative sources of information.

Works in the Web of Science, Scopus, and EBSCO databases of peer-reviewed scholarly publications were searched using keywords such as "teacher professional development." We examined papers from the period 2013-2023 in Journal of Research in Science Teaching, British Journal of Educational Technology, Science Education, International Journal for Lesson and Learning studies, Journal of Research on Technology in Education, Research Papers in Education, Frontiers in Psychology, Tech Trends, and other journals. We excluded articles that did not present the results of the study or that did not provide sufficient information about the data collection and analysis process, participants, and other important aspects of the study.

The logistics of the organization of search systems allowed us to conduct an effective search of works of the period 2013-2023, by keywords, authors, topics, to identify the journals in which the articles on the problem of interest to us were published.

Table 1 shows the quantitative ratio of articles in the databases of peer-reviewed publications by year, by keywords, "teacher professional development".

Table 1

Overview of the number of articles in databases of peer-reviewed publications for the keywords "teacher professional development"

Time period	***Number of articles***	***Name of journals***
January-December 2013	*61*	*Journal of Engineering Education – 15 articles*
January-December 2014	*49*	*ETS Research Report Series – 14 articles*
January-December 2015	*48*	*Journal of Research in Science Teaching – 11 articles*
January-December 2016	*41*	*Journal of Research in Science Teaching – 8 articles*
January-December 2017	*62*	*School Science and Mathematics – 10 articles*
January-December 2018	*72*	*British Journal of Educational Technology – 10 articles* *Journal of Research in Science Teaching – 9 articles*
January-December 2019	*63*	*European Journal of Education – 10 articles*
January-December 2020	*73*	*Foreign Language Annals – 8 articles*

		The Curriculum Journal – 7 articles *British Journal of Educational Technology – 6 articles*
January-December 2021	*51*	*Science Education – 6 articles* *British Journal of Educational Technology – 5 articles*
January-December 2022	*50*	*Journal of Research in Science Teaching – 5 articles* *Science Education – 5 articles* *British Journal of Educational Technology – 4 articles*
January-December 2023	*73*	*European Journal of Education – 8 articles* *Journal of Computer Assisted Learning – 6 articles* *Science Education – 6 articles* *British Educational Research Journal – 5 articles* *British Journal of Educational Technology – 5 articles*
Total	*643*	

The organization of the search made it possible to track the latest research, trends in the field of professional development and professional development, which contributed to the efficiency of structuring the material of this article.

As can be seen from the table, researchers show the greatest interest in studying the problems of teacher professional development in the period from 2017 to 2020 (62-73 articles). Then there is a slight decline (50-51 articles), which, in our opinion, can be explained by the shift of researchers' interests to the search for effective forms of online learning during the COVID-19 pandemic, and again a sharp increase in work in 2023 (73 articles). This suggests a renewed interest in the problem of teacher professional development in the context of a return to offline modes. It should be noted that the highest number of articles, for the keywords, 'teacher professional development' for the period 2013-2023 are recorded in indexed journals such as Journal of Research in Science Teaching (2015, 2016, 2018, 2022), British Journal of Educational Technology (2018, 2020, 2021, 2022, 2023) and Science Education (2021, 2022, 2023).

In general, we can speak about the existing interest of researchers to the problem of teachers' professional development and professional development.

For further critical analysis we selected 45 works from the review of 643 studies, which were identified using search strategies.

Results and discussion

Professional development of teachers plays a key role in ensuring high quality education. The Concept of Development of Preschool, Secondary, Technical and Vocational Education of the Republic of Kazakhstan for 2023-2029 prioritizes the continuous professional development of teachers, as this process not only contributes to the improvement of teachers' competence, but also has a significant impact on the educational environment as a whole.

The notion of teacher professional development is defined as "a lifelong growth process involving collaborative and/or autonomous learning.... Teachers are engaged in this process and actively reflect on their practice" (Concept, 2023).

In international review of the literature about teacher professional development: Villegas-Reimers (2014) strongly supports the notion that teacher professional development is a continuous process that begins at university and continues throughout the career until retirement. Villegas-Reimers (2014) actively supports the concept that teacher professional development is a continuous process that begins at university and continues throughout a teacher's career until retirement. The scholar examines a model of continuous professional development that encompasses both initial teacher education and the subsequent stages of teachers' careers. The author considers the models of stimulating teachers' professional development applied by the USA, Australia, Canada and many European countries, which are

based on taking into account rapid changes in the forms and methods of teachers' professional development (Villegas-Reimers, 2014).

Zakharova (2011) considers teacher's professional development as an active qualitative transformation of the teacher's inner world, internal determination of teacher's activity, leading to a fundamentally new way of professional life activity. Professional development is determined by the direct zone of responsibility of the person himself, who wants to become successful and stay in the profession (Luzina, 2018).

Kolesnikova (2017) states that the highest achievement of a teacher's professional development is the introduction of pedagogical innovations. This includes the application of new and modern ideas, bases and methods in the educational process, which leads to a significant improvement in its quality.

Studies by Yugfeld and Ipatova (2022), Derlin-Hammond (2000) consider teachers' professional development in the context of political, social, cultural and economic aspects.

Yugfeld and Ipatova (2022) based on the analysis of historical aspects, emphasize the importance of an individual approach to the professional development of teachers, taking into account modern trends and technologies, as well as regional opportunities for professional support.

The modern image of a teacher, according to the authors, assumes, first of all, the presence of professionalism, creativity and ethics. He should be oriented to the development of the student's personality, be able to set and achieve educational goals, adhere to moral principles and respect the cultural identity of each student. These qualities are the basis for building the teacher's own image and determine his or her success in the educational process.

The authors came to the conclusion that teachers should be actively involved in the system of continuing education, using the opportunities of formal, non-formal and informal learning. Teachers should have the skills to plan personal and professional development, which will allow them to determine the directions and content of their professional growth. In this context, analyzing new trends and changes, studying their impact on professional activities, identifying and disseminating best practices, as well as providing mentoring and tutoring support and coordinating the actions of all participants of social and professional interaction play a key role in the development of the region as a whole.

The works of domestic scientists on the issues of teachers' professional development are of significant research interest.

In December 2022, Kazakhstan adopted a new Professional Standard "Educator" (2022) based on 4 groups of competencies: professional values, professional knowledge, practice of teaching/learning and education, and professional development. For each qualification category, the standard presents precise criteria of teacher competencies, which allows not only to understand the requirements for teachers of relevant qualifications when assessing their professional performance, but also for teachers themselves to plan their professional development. The detailed description of the content of pedagogical activity and requirements to the level of teacher training included in the professional standard will allow laying the foundation for the development of educational programs of teacher education, professional development of teachers and retraining of specialists from other spheres of activity. It also stimulates reflection processes and aims to support the professional growth of teachers; standards stimulate activity within professional communities, promote the penetration of research methods and innovative approaches into the practice of teaching and education.

Kazakhstan scientists Karayev et al. (2023) in the work "Professional development of a teacher as a factor in improving the quality of education in schools" emphasize the importance of professional development of teachers to improve the level of education in schools. The portrait of a modern teacher is considered as a set of his professional qualities, skills and values necessary for successful work in the modern educational environment. Evaluation of teachers'

professional development is presented through criteria and indicators, such as the results of students' mastering educational programs, development of students' abilities through participation in intellectual competitions, personal contribution of a teacher to improving the quality of education by improving teaching methods, generalization of teaching experience and research activities of a teacher.

The results of the research by Tazhbaeva and Dolidze (2021) on teachers' professional development through online collaboration are of interest. Thus, the paper "Gains of e-collaboration in professional engagement initiatives" presents an analysis of the SR Teaching and Learning community, which was initially established as an organization engaged in professional development of English language teachers in Baku, Azerbaijan. Online learning is seen as an effective form of professional development for teachers. The authors state that "in today's world, successful implementation of e-collaboration between teachers is a prerequisite for their professional development", providing minimal time costs, thus, according to scholars, increasing the effectiveness and relevance of professional development.

Kuzhabekova et al. (2018), studying the issues of professional development "Educational Flagships as Brokers in International Policy Transfer: Learning from the Experience of Kazakhstan", based on the experience of "Nazarbayev Intellectual Schools" state the need to involve in the professional development of teachers only highly qualified and motivated teachers and staff who have experience working abroad and speak English. According to the authors, this position is a condition for increasing the level of teacher's professional mastery, continuity and quality of their training.

Of interest is the work of a team of researchers "Teacher Leadership in Kazakhstan" (Kanai et al., 2023), which examines teacher professional development under the leadership of the teacher. The authors believe that the most effective model of teacher professional development is the bottom-up model, which views teachers as professionals who are capable of developing themselves and managing change in education. The emphasis in teacher professional development is on the development of non-formal forms of school-based teacher education.

The analysis of modern approaches allows us to formulate the following definition of the concept of "teacher's professional development" as a continuous process aimed at expanding and deepening the professional knowledge, skills and abilities of a teacher, as well as improving the level of his/her professional qualification. In our opinion, this process should include continuous learning, self-development, adaptation to changing educational requirements and the context of educational content, as well as active introduction of new pedagogical methods and technologies in pedagogical practice.

It should be noted that a significant number of studies reviewed within the framework of the objectives of this article are devoted to modeling, methodology and forms of teachers' professional development (68%).

What is the position of scientists regarding approaches and strategies for organizing teachers' professional development? For example, Johnston (2009) proposes the idea of collaborative teacher professional development, which involves teachers' cooperation with colleagues, university researchers, students and other participants in the educational process. Kraft, in turn (2000), suggests a wide range of methods such as independent learning, pedagogical research, on-the-job coaching, mentoring, learning partnerships, reflection, cooperative learning and the use of technology in teaching and others.

Cullen (1997) notes that traditional forms of teacher professional development include "short-term or one-time professional development programs conducted by external 'experts' that represent a transfer of knowledge, mostly created by other 'experts.'" These programs are often popular because they give teachers an opportunity to get out of routine, meet colleagues, and discuss new ideas. However, the main problem with such programs is that the knowledge

gained often does not take into account the real contexts and needs of teachers, both practically and conceptually.

In "Developing Teachers: The Challenges of Lifelong Learning", author Day (2013) discusses not only the nature of teacher professionalism, but also the importance of continuous professional development and the conditions in which this development takes place. According to Day, teachers play a key role in the educational process, being a valuable resource of the school. They pass on knowledge, skills and values to the next generation. However, in order to be successful in their educational roles, they need to be well prepared for their profession and continually develop their skills throughout their careers. Supporting their well-being and professional development is therefore integral to improving standards of teaching, learning and achievement. The author also takes the position that teachers need to develop actively in the course of their professional life, so it is important that they are centrally involved in decisions about the direction and process of their own learning.

In her article "Professional development of a teacher as a response to external topical challenges" Pozdneva (2022) discusses the importance of professional development of a teacher as a continuous process reflecting changes in external requirements to the set and level of professional competencies and the list of professional and personal qualities. The scholar, analyzing various approaches to teacher development, draws attention to mastering new educational technologies, participation in innovative educational projects, and development of research skills. For example, considering the Peer Coaching technology, the author shows that it promotes mutual professional growth, allowing teachers to observe the process of introducing a new method used by a more experienced teacher, and then apply it in their own work, exchanging help both in preparation for the lesson and during the lesson itself.

Also, in the context of teachers' professional development, the author considers the technology of teachers' research skills formation and participation in research work. On the one hand, research is associated with the teacher's participation in educational innovations, where he/she makes real changes in teaching practice and studies the results of such changes. On the other hand, research is seen as a special form of professional activity of a teacher, which helps him/her to solve complex professional problems. The teacher's participation in research work is manifested in the choice of his/her research area, active participation in changes in educational practice, and dissemination of new pedagogical knowledge in the professional community.

In addition, three main directions in the development of pedagogy are highlighted: improving professional mobility, the principles of open professionalism, and encouraging dialog in collaborative professional activities.

Developing the thought of researchers Kanai (2023), Frost et al. (2023) on the role of informal forms of school-based teacher training in the context of the need for their professional development, let us point out the work of Ivanova and Antonov (2019) "Professional development of teachers in the conditions of educational organization", which focuses on the system of in-school professional development. In-school professional development, according to the researchers, maximally takes into account the potential and needs of teachers of the school, the resources of the educational organization. This system is characterized by flexibility, mobility and ability to respond quickly to the demands of the professional community, as well as to take into account the peculiarities of a modern school. The authors consider different approaches to this problem, identify components, criteria and indicators of professional development, substantiate the possibilities and stages of socio-pedagogical design as a basis for the professional development of teachers, and describe the mechanism for developing an individual trajectory of professional development of teachers of an educational organization.

Using the collective work of researchers Gracheva et al. (2020) "Teacher professional development models and practices in foreign educational systems", in Tables 2 and 3 we present the results of the scientific analysis organized by the authors of the article based on the sociocultural approach to the organization of the system of additional professional education for teachers, the concepts of continuous and non-formal lifelong learning, as well as methodological approaches and methods developed and applied in the field of comparative pedagogy.

Table 2

A model of teacher professional development in Hong Kong

Unit	*Description*
Professional education	teachers must have a bachelor's degree; every certified teacher must register and obtain a teaching permit; mandatory compliance with the Code of Professional Ethics for Teachers.
Formats and practices of professional development	active mini-research (analysis of the results of one's own teaching activities); mentoring; professional communication through social networks; intensive interaction between teachers within the team; internships, open lessons, exchange of experience; master classes and short-term courses.

Table 3

Model of teacher professional development in Finland

Unit	*Description*
Prestige of the profession	teacher training curriculum is based on complete autonomy; participation of teachers in continuing (continuous) education in Finland does not affect their career growth or salary, but is in demand, as it allows them to maintain their professionalism; responsibility for the professional growth of teachers lies with employers represented by heads of educational organizations and municipal committees.
Teacher training system	teacher training is carried out only by universities; all applicants for the teaching profession in Finland must have at least a master's degree; universities offer various modules for advanced training and retraining of teachers (in individual disciplines, pedagogy, interdisciplinary courses, etc.), long-term courses for mastering competencies that allow working with children with special educational needs
Standards for entry into the profession and continuity of teacher education	only every 10th applicant is allowed to receive pedagogical education, a ranking of applicants is maintained; continuous professional pedagogical development includes 3 phases - teacher education, "entry" into the profession (3-5 years of work after graduation), additional professional pedagogical education
Practical orientation	teacher training involves extensive practice (from 15 to 25% of the entire training program); students are required to work for a year in schools assigned to their universities or in partner schools before receiving a diploma

Research focus	- each student actively participates in scientific seminars and projects, where he practically applies various modern research methods and approaches
Personification of the teacher professional development system	- autonomy and independence of schools; - lack of a level system of career development for teachers (a successful teacher can become a school director); - work of a national mentoring network for professional adaptation of graduates of pedagogical universities
Practices of using resources of partnerships and multi-professional cooperation	- the content of teacher professional development programs is multifaceted and project-based (trainings, open lessons); teacher's project activities. The content of the projects largely reflects the needs of local education (education of children with disabilities, education of gifted students, etc.); work of specialized educational centers for pedagogical support; multi-professional cooperation (integration of scientific disciplines within the framework of STEM education)

Derlin-Hammond's (2000) survey of teacher development policies in the 50 states (SASS) for 1993-1994 and analysis of the National Assessment of Educational Progress (NAEP) suggests that investments in the quality of teacher development can lead to improvements student success. Quantitative analysis shows that teacher preparation and certification measures have the greatest impact on student achievement. State policy analysis also suggests that state policies have an impact on the overall level of teacher qualifications and competencies.

Aslam (2013), having conducted a study of the content of professional development of teachers in public and private schools in Pakistan, concluded that the effectiveness of professional development is ensured by the flexibility of training curricula and the high level of motivation of teachers in advanced training programs.

We consider the research result of a group of Qatari scientists Abu-Tineh and Sadiq (2017) to be productive, since the education system of this state is going through a period of intensive renewal of the content of school education, as in Kazakhstan. Thus, considering models of professional development of teachers, the mentoring model was classified as an effective form. The least effective model was the online training for teachers.

The authors consider advanced training programs lasting from 30 to 100 hours in total to be one of the most effective models for teacher training. At the same time, the authors note that this process should be continuous (annual). According to research results, the average duration of annual teacher training courses of 49 hours increases the quality of knowledge of students by 21%, while short-term courses of 14 hours have virtually no positive effect on the achievements of students.

Lindvall and Ryvea (2019), having studied 95 works on professional development of teachers in different countries of the world, came to the conclusion that in most models' teachers are primarily considered as implementers who must adapt their professional development in accordance with external and predetermined goals and practices. This behavior reflects a top-down model of teacher professional development. The "bottom-up" model of teacher professional development is considered more productive, which assumes a high level of trust in teachers, which allows them to choose the trajectory of their professional development.

The content of research into the forms of professional development of teachers could not but be affected by the trends in the development of information and communication technologies. Thus, Selik et al. (2022) pay great attention to the professional development of teachers in the field of using artificial intelligence for the effective organization of the

educational process. In general, there are three areas of professional development for teachers in the field of artificial intelligence: planning, application and assessment.

Also, Selik et al. (2022) note the need to use video technologies for teacher collaboration in the process of their professional development. Ramos et al. (2022) also highlight the use of video technology to ensure effective teacher professional development through collaborative learning, collaboration and reflection.

Thus, our research highlights the importance of a systematic approach to teacher professional development. Effective professional development must be integrated into the overall school strategy and supported at all levels, from administrative to practical. This approach helps to create a sustainable environment for the continuous improvement of teaching skills, which ultimately leads to improved quality of education and satisfaction of all participants in the educational process.

Conclusions

Our research on the topic "Issues of professional development of teachers in the works of modern researchers as the basis for searching for the most effective forms of their training" allows us to draw the following conclusions:

1. Modern research by domestic and foreign scientists emphasizes the critical importance of continuous professional development for teachers, as it directly affects the quality of education and student achievement. Professional development helps improve teaching skills, update knowledge and introduce innovative teaching methods.

2. Researchers have identified various forms and methods of informal teacher education, including workshops, professional development courses, professional communities and online learning. Each of these forms has its own advantages and can be tailored to the specific needs of teachers and schools.

3. Modern technologies are playing an increasingly significant role in the professional development of teachers. Online platforms and digital resources provide access to a wide range of educational materials and allow teachers to learn at their own time, which promotes flexibility and individualization of the educational process.

Research shows that the most effective professional development programs take into account individual needs and teacher preparation levels. A personalized approach allows you to maximize learning outcomes and meet the specific needs of teachers.

Important factors for successful professional development are collaboration and support from colleagues and school administration. Professional communities and mentoring help teachers share experiences, solve problems, and implement best practices in the teaching process.

In conclusion, we point out that in the context of searching and developing models of professional development for teachers, it seems promising to us to study models based on non-positional leadership in schools. Non-positional leadership involves influencing and supporting colleagues without formal authority and plays a significant role in creating a supportive and inspiring learning environment.

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

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DOI:10.59787/2413-5488-2024-48-4-17-25

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ISSUES OF FORMATION OF PROFESSIONAL FOREIGN LANGUAGE COMPETENCE OF STUDENTS IN THE CONTEXT OF CONVERGENCE OF FORMAL AND NON-FORMAL EDUCATION

Abstract: This article considers the peculiarities of the formation of students' professional foreign language competence in the conditions of convergence of formal and non-formal education. The necessity of integration of formal and non-formal education in foreign language education is substantiated. The role and significance of formal education provided by educational institutions and non-formal education carried out outside educational institutions in the formation of students' professional foreign language competence is analyzed. Special attention is paid to the interaction of these two forms of education and their influence on the development of students' linguistic and communicative skills. One of the main objectives of the study is to identify the educational needs of students in the conditions of formation of their professional foreign language competence. As a result of the study, the authors made conclusions that the majority of students consider it appropriate to integrate formal and non-formal education, as it will allow them to master additional competencies and increase their motivation for learning. Thus, in conclusion, the authors of the article summarise the results of the study and draw conclusions about the significance of the interaction between formal and non-formal education for the formation and improvement of students' professional foreign language competence.

Keywords: foreign language competence, formal education, non-formal education, professional foreign language competence, convergence, competence, higher education.

Introduction

Education plays an essential role in the development of people, providing them with the knowledge and skills to successfully adapt in the modern world. However, the question of which is more effective - formal or non-formal education - has always been and continues to be an issue. Rather than focusing on their differences, it is time to understand and recognize the importance of the convergence of formal and non-formal education. In general, the issues of integration of formal and non-formal education in the course of professional foreign language training in higher education is one of the pressing topics of modern pedagogy. The relevance of this problem is associated with the need to improve the training of specialists in the era of a new scientific and technological paradigm, characterized by interdisciplinarity, and convergence of different spheres of life and production.

In an era of a new scientific and technological paradigm characterized by unprecedented speed of innovation and globalization, effective foreign language training is becoming an integral part of professional development. Proficiency in English and other languages provides direct access to the latest research, patents, and technological innovations, allows for deeper immersion in the technological process, improves interaction with technology, enhances opportunities for international cooperation and knowledge exchange, and contributes to the development of professional competence and personal growth. Foreign language training in modern realities is not just a supplement to professional skills, but also a necessary condition for a successful career, innovative development, and effective intercultural interaction,

therefore, the issues of improving the training of specialists who speak foreign languages for professional communication become critical to ensure competence and competitiveness of both the individual and society as a whole.

This scientific article is carried out within the framework of research of the problem of improvement of continuous professional foreign language training, caused by the presence of a number of objectively existing contradictions, among which there are:

- on the one hand, the need of modern society in training of university graduates with the willingness and ability to independently develop and continuously improve foreign-language competencies in accordance with the needs of personal and professional spheres;

- on the other hand, a lack of scientifically grounded models of teaching professionally oriented foreign language in the conditions of convergence of formal and informal higher education, realizing the development of demanded competencies.

The hypothesis of the research is as follows:

- if scientific and methodological foundations of professional foreign language training are realized in the conditions of convergence of formal and non-formal higher education, providing hybrid, convergent educational environment, the convergence of pedagogical concepts of traditional and innovative developmental teaching and education, integration of formal and non-formal educational results, it will ensure the readiness of university graduates to independently develop and continuously improve foreign language competencies in accordance with their needs.

In order to develop scientific and methodological foundations for the realization of professional foreign language training in the conditions of convergence of formal and non-formal higher education, it is necessary, first of all, to clarify the concept of "non-formal foreign language education", to identify the possibility of convergence of formal and non-formal education in foreign language training of students, which is the task of this article.

The purpose of this research paper is to investigate the possibility of convergence of formal and non-formal education in the conditions of professional training of foreign language specialists.

In order to achieve this goal, the following objectives were set:

1) analyze relevant research and sources related to the topic;

2) define the concepts of "competence", "foreign language competence", and "professional foreign language competence".

The study has shown that processes in society and education are interrelated: The development of post-industrial society requires convergence as the basis of a new pedagogical paradigm, and changes in education affect social development. To improve foreign language training of future specialists, it is necessary to combine formal and informal learning in the environment of convergent education.

The Concept of Development of Higher Education and Science in the Republic of Kazakhstan for 2023 - 2029, approved by the Resolution of the Government of the Republic of Kazakhstan dated 28 March 2023 № 248 notes the following: "Lifelong learning, which has become a topical trend in recent decades, increases the competitiveness of people through the development of intelligence, structured thinking, the ability to adapt and self-organise, expanding the circle of acquaintances, opportunities and ideas about the world, improving psychological health (CDHES, 2023). For example, in such developed countries as New Zealand and Finland, the participation of adults (16-65 years old) in non-formal education is 67 percent and 65 percent respectively. In Kazakhstan, this indicator is 17 percent (women 20 percent, men 13.85 percent). This is almost three times less than the OECD average (47 percent)". Consequently, there is a need to integrate formal and non-formal education, as the active economic activity of a person has increased from 25-30 to 50-60 years of age. Such a length of working career cannot be built on one basic education in the conditions of constant

changes in the labor market, as it will inevitably lead to a decrease in the competitiveness of citizens (CDHES, 2023).

Historically, formal education received in schools and universities was seen as the only correct path in the educational system. However, dramatic changes in the world economy and technology have affected the requirements for professional training. Non-formal education, which is based on independent study and acquisition of knowledge outside educational institutions, has become more and more appreciated and demanded in the modern world (Korshunov et al., 2023).

It is important to realise that formal and non-formal education have their advantages and limitations. Formal education provides a systematic structure for the study of core subjects and the development of analytical thinking. It provides a foundation for a general outlook and the ability to learn at more advanced levels. In addition, formal education provides certification and recognition of learning achievements, which is important for employment and career advancement.

On the other hand, non-formal education allows flexibility in the choice of topics to suit the interests and needs of each individual. It provides space for self-realization and creative thinking. Non-formal education also fosters self-awareness and self-discipline. Moreover, non-formal education often makes it easier to adapt to changes in the educational and professional environment (Kicherova et al., 2023).

Convergence of formal and non-formal education becomes not only a logical continuation of their cooperation but also a necessity for successful and profound knowledge and skills. In foreign language education this integration is especially important because as practice shows, the competencies received only in the framework of traditional education are not enough for mastering professional foreign language competence in full. In the conditions of convergence of formal and non-formal education students get the opportunity to use the best of both worlds. Both forms of education complement each other and play an important role in ensuring the formation of all aspects of professional foreign language competence. We believe that ultimately, the convergence of formal and non-formal education will create a more flexible and effective system that promotes communication, analytical thinking, and creativity, which is the most important factor for the successful formation of students' professional foreign language competence.

Materials and research methods

For a complete presentation of the concept of "professional foreign language competence" we will consider such concepts as "competence" and "foreign language competence" separately.

The dimension approach views education as a value from different perspectives: cultural, social, economic and personal. Education as a value facilitates the transmission of cultural heritage and cultural interaction, contributes to the formation of civil society and the reduction of social inequalities, drives economic growth, improves the quality of the labour force and promotes innovation and development, supports personal and professional growth, skills development and self-determination. Education as a system is characterised by taking into account the various components and the interrelationships between them, including the different levels of educational organisations, the different formats of education, and the social, political and economic environment in which it operates. Education is also a holistic pedagogical process, including target, content, activity and result components, providing education, training and development in accordance with social and personal needs. As a separate aspect, the output side of education can be studied and its cognitive, emotional, social and vocational outcomes can be assessed, such as the knowledge, skills and abilities that students acquire; outcomes related to personal development, self-esteem, motivation and

emotional stability; social outcomes reflecting students' ability to interact with others, adapt to different environments and participate in community life; vocational outcomes in achieving career goals and success in the world of work; and social outcomes related to the achievement of career goals.

Mikhailov et al. (2013) define competence as "a predetermined norm that is the expected result of learning in each specific subject". Khutorskoy (2010) believes that competence is "a range of issues in which a person is well-informed, has knowledge and experience. Faleeva and Nurzhanova (2016) link competence "with the ability to cognitive activity and the ability to communicate with foreign linguoculture and cognise it".

According to these definitions of the concept "competence" we observe that competence is a person's ability, which he/she masters as a result of his/her activity to new knowledge and skills. Based on research of Nasikhanova and Davydova (2013) foreign language competence is "a specific type of activity, the content of which is the exchange of information between members of different language communities to achieve mutual understanding and interaction; the ability to understand and produce an unlimited number of linguistically correct sentences with the help of learnt language rules and rules of their connection".

Thus, analysing the above opinions, we understand foreign language competence as a person's ability to understand and speak in a foreign language environment. Kobeleva (2010) believes that professional foreign language competence of a specialist depends on the development of his/her general professional competence, as the formation of foreign language competence includes both the development of foreign language communicative and professional competences.

Foreign language communicative competence is understood as "a set of knowledge about native and foreign cultures, skills and abilities to understand and adequately use professional vocabulary in speech, to correctly apply knowledge about the culture of native speakers in professionally oriented communication situations and the ability to effectively participate in professional intercultural interaction with foreign colleagues".Aitov (2007) connects foreign-language communicative competence with readiness and ability of a future specialist who does not study a foreign language at the linguistic faculty to apply the acquired knowledge to carry out foreign-language intercultural communication.

Results and discussion

In general, based on the above definitions, we can say that professional foreign language competence is the knowledge, skills and abilities of a future specialist, providing him/her with foreign language competence.

Having analysed the above-mentioned studies in the field of convergence, and distinguishing the notions of formal and non-formal education, we came to the conclusion that the conditions of convergence of formal and non-formal education are such conditions under which the above-mentioned formations are combined in order to obtain an effective result in education. In our case, in the formation of professional foreign language competence.

In order to identify the educational needs of target groups in the context of convergence of formal and non-formal higher education, we conducted a survey in the format of questionnaires. The survey questions related to students' knowledge about formal and non-formal education, their attitudes towards these types of education and their educational needs in the context of convergence of formal and non-formal education, for example:

1. How do you think formal higher education differs from non-formal higher education? (This question aims to explore students' understanding of the structural differences and implications for learning.)

2. In your opinion, what is the merit of non-formal education? (Respondents can express the value they find in flexibility, practical applications, or personalized learning experiences associated with non-formal education.)

3. What do you perceive as the disadvantage of formal education in teaching a foreign language? (This question invites reflection on potential limitations, such as rigidity in curriculum or lack of real-world practice.

3. What do you know about formal education? (Understanding students' baseline knowledge helps gauge their familiarity with formal educational systems.)

4. Do you believe that formal education alone is sufficient for mastering a foreign language? (This question seeks to determine students' views on the adequacy of formal education compared to other learning modalities.)

5. Do you attend foreign language courses outside of your formal education? (This helps assess engagement with non-formal learning opportunities and the commitment to language acquisition.)

6. What teaching methods do you think are the most effective in teaching a foreign language? (Responses can highlight preferences for methods such as immersive learning, communicative approaches, or technology-enhanced instruction.)

7. Does formal education require additional knowledge and skills to be effective? (This question encourages students to consider the role of supplementary knowledge in enhancing their formal education experience.)

8. How would you evaluate the quality of the language classes conducted in your formal education? (Insights gained from this question can reveal students' satisfaction levels and perceptions of teaching effectiveness.)

9. How would you prefer to learn a foreign language? (This open-ended question allows respondents to express their ideal learning conditions, potentially incorporating elements from both formal and non-formal education.)

Through this survey, we aim to gather comprehensive data that will inform the development of curricula and instructional strategies that effectively merge formal and non-formal educational practices, ultimately enhancing the professional foreign language competence of students.

The data collected will allow us to:

1) Tailor Educational Programs: By analyzing student feedback, we can design curricula that incorporate best practices from both formal and non-formal education, ensuring a more engaging and relevant learning experience.

2) Enhance Practical Application: Insights from the survey can guide the integration of real-world scenarios and hands-on activities into formal language instruction, fostering practical language skills that are crucial for professional settings.

3) Promote Lifelong Learning: Understanding students' attitudes towards non-formal education will help us create pathways for continuous learning, encouraging students to pursue additional language courses or workshops that complement their formal studies.

4) Identify Effective Teaching Methods: By exploring students' preferences for teaching methods, we can implement innovative instructional strategies, such as blended learning, project-based learning, or collaborative activities, that cater to diverse learning styles.

5) Facilitate Interdisciplinary Approaches: The survey results may reveal opportunities for integrating foreign language instruction with other fields of study, enhancing students' ability to use language skills in various professional contexts.

6) Support Institutional Development: The findings will also inform institutional policies and practices regarding curriculum design and pedagogical approaches, ensuring that educational offerings remain aligned with current industry demands and student needs.

Ultimately, the goal is to enhance the professional foreign language competence of students, equipping them with the skills and confidence needed to thrive in a globalized world. By bridging the gap between formal and non-formal education, we can create a more holistic and adaptable educational framework that prepares students for success in their future careers.

Taking as a basis some answers of the conducted questionnaire, we present the results of our research. The answers to the questions concerning the study of educational needs of target groups in the conditions of convergence of formal and non-formal education were distributed as follows (Table 1).

Table 1

Question: "How would you like to learn a foreign language?"

№	Response	%
1	in formal education settings	29,5
2	in non-formal education settings	18,2
3	in formal and non-formal education settings	52,3

The high percentage of choice of foreign language learning option in the conditions of convergence of formal and non-formal education, allows us to conclude that students understand the advantages of convergence of formal and non-formal education and are interested in this form of learning, 29.5% of respondents chose traditional formal education, and 18.2% of respondents chose the option of learning a foreign language in non-formal education.

To the question "Does formal education require additional knowledge and skills? " the answers of respondents were distributed as follows (Table 2).

Table 2

Question: "Does formal education require the receipt of additional knowledge and skills?"

№	Response	%
1	yes, it does	70,5
2	no, it doesn't	13,6
3	difficult to answer	15,9

The analysis of answers has shown that the overwhelming majority of survey participants are not fully satisfied with the quality of formal education and feel the need to obtain additional skills and knowledge. This indicates that formal education is not enough for current students to master the necessary competences, which actualises the subject of our research.

To the question "What is the dignity of non-formal education" the answers of the survey participants were distributed as follows (Table 3).

Table 3

Question: "What is the merit of non-formal education?"

№	Response	%
1	less time-consuming and less financially costly	13,6
2	work opportunity	45,5
3	the effectiveness of training in relation to voluntary attendance in the classroom	40,9

From the percentages of answers to this question, we see that students consider it advisable to integrate traditional formal education with non-formal education, because on the one hand it will give them the opportunity to combine their studies with other spheres of their lives, and on the other hand it will affect the effectiveness of learning due to voluntary attendance of classes.

Conclusion

Summarizing the findings above, it can be concluded that students strongly favor the integration of traditional formal education with non-formal education. This combination, as expressed by the respondents, is perceived to enhance the efficiency of their learning experiences, facilitate the development of additional skills and abilities, and allow for a more seamless integration of their studies with other aspects of their lives.

A significant portion of survey participants (70.5%) indicated that they believe formal education alone is insufficient for cultivating the comprehensive professional foreign language competencies required in today's global environment. This sentiment highlights the need for a more adaptive educational framework that recognizes the limitations of traditional teaching methods in addressing the diverse needs of learners.

Consequently, it is crucial to establish a robust system that effectively integrates formal and non-formal education. This can be achieved by developing flexible and innovative educational programs that empower students to select both formal and non-formal modules and courses tailored to their interests and career aspirations. Such a system could include:

1. Modular Course Offerings: Allowing students to mix and match courses from various disciplines and educational formats, enabling them to create a personalized learning path.
2. Collaborative Learning Environments: Encouraging partnerships between educational institutions and community organizations to provide real-world learning opportunities that complement classroom instruction.
3. Recognition of Non-Formal Learning: Implementing systems to formally acknowledge skills and competencies gained through non-formal education, thus enhancing the value of these experiences in the eyes of employers.
4. Use of Technology: Leveraging digital platforms to deliver non-formal education, such as online workshops, webinars, and interactive language practice, thereby making learning more accessible and engaging.
5. Continuous Feedback Mechanisms: Establishing channels for ongoing feedback from students regarding their educational experiences, which can inform continuous improvements to both formal and non-formal programs.

By fostering this integrative approach, educational institutions can better equip students with the necessary language skills and competencies, ultimately preparing them to navigate the complexities of the global job market and succeed in their professional endeavors. This

commitment to enhancing educational effectiveness will not only benefit students but also contribute to a more skilled and adaptable workforce.

Funding Information

The article was prepared within the framework of the scientific project № AR19678268 "Scientific and methodological foundations of the implementation of professional foreign language training in the conditions of convergence of formal and non-formal higher education" under the grant funding of the Committee of Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan.

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

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DOI:10.59787/2413-5488-2024-48-4-26-33

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WORK-INTEGRATED LEARNING FRAMEWORK AT UNIVERSITY

Abstract: Work-integrated learning helps to coordinate the theoretical training of students with future practical activities in the workplace, gives an opportunity to business, university and the state to participate in joint activities for innovative development in all sectors of the economy and achieve their organizational and national goals. Work-integrated learning is practiced in most countries, but it is not a common feature of all universities. Stakeholders, university, industry organizations and students, there is a gap in empirical research in terms of identifying the interactions and roles of stakeholders in work-integrated learning framework. The purpose of the study was to create a framework of work-integrated learning at a university, with the inclusion of three stakeholders involved in this process: an industry and an academic mentor, and a student. In this framework, the stages of work-integrated learning were developed, the functions of the participants of work-integrated learning at each stage, teaching methods and learning outcomes were characterized. At the theoretical level, this framework contributes to the amount of knowledge about work-integrated learning in universities. On a practical level, the study has a positive impact on students, the university and industry organisations that become partners in work-integrated learning. The created framework will contribute to the improvement of educational results, better preparation and compliance of graduates with the requirements of the labor market.

Keywords: framework, work-integrated learning, industry mentor, academic mentor, student, university, labor market, employment.

Introduction

Universities play a key role in shaping the future of society's human capital. In order for graduates to successfully interact with the ore market and fulfill social roles in society, they must be prepared for effective participation in the economy and social life. To do this, it is necessary to integrate new framework of training, with an emphasis on the connection between theory and practice. Work-integrated learning is one of the tools to solve this problem, as it contributes to increasing the effectiveness of training through the practical experience gained in the workplace. Work-integrated learning also offers a partnership approach between business, universities and the state for the joint development of industries and solving current problems.

The movement of students between universities and industry enterprises contributes to the development of new framework of education and increases the motivation of students. Cooperation between industry organizations and universities helps to improve educational programs, improve employment opportunities, develop management skills and contribute to adaptation to working conditions.

The introduction of work-integrated learning in the educational programs of universities remains an important task. The problems of introducing work-integrated learning are associated with the flexibility and variety of framework offered by universities. There are several common framework of work-integrated learning at a university. Some frameworks include bilateral relations between universities and industry organizations, the transfer of knowledge and resources, and the development of educational programs. Other frameworks

include the involvement of industry organizations in the early stages of program development, the use of new equipment. The only common characteristic for all framework is the acquisition of practical experience.

To ensure the success of work-integrated learning, it is necessary to work to ensure that the work experience gained by the student has a real effect. This implies active interaction between students, industry organizations and universities, as well as the coordination of educational programs. This requires a framework of work-integrated learning at the university, reflecting the interaction of all participants in the process.

The presented framework of work-integrated learning at the university gives students the opportunity to contribute to the improvement of the organization's work by performing tasks in the working environment. Universities, using the working environment in the training of students, receive information about the current situation in the industry and thereby graduate more qualified workers.

Universities are the main center of concentration of the country's future human capital. According to Becker, human capital "is a set of knowledge, skills, and abilities used to meet the diverse needs of a person and society as a whole" (Barabanova et al., 2018). Universities should provide education that allows graduates to find employment and perform socio-economic roles in the labor market and society, effectively and efficiently contribute to and develop the local and global economy (Nicholas, 2017). To do this, new frameworks of training should be integrated, contributing to the connection of theoretical training with real practical experience. One of the solutions to this issue may be the introduction of the work-integrated learning framework into the pedagogical process.

Work-integrated learning brings an element of "realism" to learning, which increases its effectiveness. On-the-job training, as one of the stages of work-integrated learning, creates an environment in which trainees are active participants in the learning process. This increases their self-confidence, complements theoretical training, improves practical knowledge and skills, and expands opportunities for further employment.

Work-integrated learning provides business, the university and the state with the opportunity to achieve their goals according to the "triple helix" framework for the effective development of new industries and solving problems in existing ones (Etzkowitz and Zhou, 2017).

In the process of work-integrated learning, there is a circulation of subjects between institutional and sectoral spheres, as a result of which new ways of organizing the work of teachers appear in universities.

It is necessary to develop and adapt frameworks of work-integrated learning in such a way that students are highly motivated (Kim et al., 2015). Cooperation between industry organizations and universities in the development of such learning frameworks is extremely important, as it contributes to improving employment opportunities, career development, development of managerial skills, as well as readiness to adapt to production conditions (Khasanah, 2020). Leaders of industry organizations believe that the best way to teach professional skills is on-the-job training, where students gain practical work experience (Leong et al., 2013). An important goal is the convergence of supply and demand in the labor market, especially in relation to specialists who excel in their fields (Muslih, 2014). Training that integrates with work (work-integrated learning) aims to create training that is as close as possible to natural work situations.

Work-integrated learning provides students with the opportunity to gain work experience and improve their work skills. It is considered an important means of preparing graduates for work in a real working environment. Conducting work in practical conditions occurs through the interaction of students with industry organizations to gain practical experience (Karim et al., 2019). In some fields, such as business, psychology and industry, work-integrated learning

helps to fill significant gaps in graduates' readiness for the workforce (Jones, 2016). The process of implementing work-integrated learning includes the exchange of information and ideas about work, support in the process of making decisions about employment and the development of strategies for the performance of work (Jackson, 2015).

Work-integrated learning solves the following main issues that may arise in the learning process:

- development of cooperation between industry organizations and universities in the introduction of work-integrated learning, which is necessary to improve the quality of graduates;
- involvement of employers in the process of training future specialists;
- combining academic learning experience with practical industry experience;
- Introducing alternative approaches to teaching methods and student assessment;
- development of professional skills of students;
- increasing the number of high-quality graduates who are ready for professional activities.

Despite the latest achievements in this area, the introduction of work-integrated learning in educational programs remains an important task for universities.

Types of work-integrated learning may include placement in an industry organization, framework ing, industrial projects and internships.

Placement in an industry organization – students undergo on-the-job training for a certain period of time, it can vary from one to two semesters. Accommodation can be full or partial.

Simulation – allows students to apply theoretical knowledge in practice and develop skills for solving real problems in conditions that are as close as possible to the working environment. This type allows students to get a realistic and valuable experience.

Industrial projects are tasks that involve specific activities, are performed in the workplace, and offer specific activities, including product development. These projects can be carried out individually or in groups, and the students who participate in them learn the relevant areas in collaboration with industry mentors, to the mutual benefit of all parties involved.

Internships include fieldwork, internships, and other similar activities.

The problems of implementing work-integrated learning programs are widely known in the professional environment. These problems are related to the flexibility and variety of frameworks implemented by universities.

There are several common frameworks of work-integrated learning in universities.

Work-integrated learning frameworks that create a two-way relationship between a university and an industry organization, through various activities and resources (Lynne B., 2003).

Frameworks in which industry organizations participate in the early stages of the development of educational programs, install new equipment in the laboratories of the university. This involves modernizing the teaching facilities of higher education institutions to meet the needs of industry organizations, in particular for the dissemination of new technologies. Also, these frameworks involve the study of theory at a university under the guidance of teachers from industry organizations (25%) and training in the industry field (75%). Evaluation is done at the end of each course's program. The limitation of this framework may be that the basis for one specific industry is created, and not for a wider one (Ariffin T., Asmah, 2009).

Frameworks that describe the relationship between universities and industry organizations, in which universities implement education that corresponds to the technological developments of the industry and produce students with knowledge and skills that meet the needs of the relevant industry (Smith, 2002).

Frameworks showing the relationship between the student and the employer (training), the student – the educational institution (education), the employer – the educational institution (the generation of knowledge in accordance with the academic needs of the educational institution). According to this framework, work-integrated learning is defined as the acquisition of academic knowledge and skills in the context of purposeful activities involving the active participation of an individual student, an industry organization and an educational institution working according to an agreed educational program (Edmunds, 2007).

The only characteristic that unites the presented frameworks is the acquisition of practical work experience. Knowing the importance of gaining practical experience, employers and the government are calling for the mandatory introduction of work-integrated learning in university programs. With this in mind, it is necessary to identify the characteristics necessary for the experience gained in the process of work-integrated learning to have an effect. For this purpose, this article presents a framework of work-integrated learning at a university, showing the interactions and functions of the participants in this process.

Methods and organization of the study

To understand the patterns underlying the interaction and function of participants in work-integrated learning at a university, it is necessary to present a framework of work-integrated learning at a university.

Frameworking is a scientific method of studying objects, processes, etc. by building their frameworks that preserve the main features of the object of study (Taubaeva, 2015).

In pedagogy, frameworking is successfully used to solve important didactic tasks: optimizing the structure of educational material, improving the planning of the pedagogical process, managing cognitive activity, managing the educational and cognitive process, diagnostics, forecasting, and designing learning.

The framework of work-integrated learning at a university can be used as a way to assess the quality of educational and methodological documentation, means, methods of teaching, improving knowledge control as a means of coordinating various components of the work-integrated learning system at a university.

The framework will create a visual image of the essential components of work-integrated learning at the university, hidden from external observation, will reveal their internal structure and essence. It will reflect the connection of work-integrated learning with the means, methods of teaching and control and present a picture of the future state of the process and its results.

Results and discussion

Based on the study and theoretical analysis of the literature on the research problem, the study of practical experience, the results of the questionnaire and the survey of stakeholders, a framework of work-integrated learning at the university was developed, represented by target, content-procedural and evaluation blocks (Figure 1).

Figure 1
Work-integrated learning framework at university

Target block		
Purpose		***Tasks***
Planning and organization of work-integrated learning based on a combination of theoretical training at the university with practical training at the workplace		1) to develop the stages of work-integrated learning 2) to characterize the functions of the participants of work-integrated learning at each stage 3) conduct diagnostics of the qualitative assessment of learning outcomes
⬇		
Content-procedural block		
Functions of the academic mentor, industry mentor and student at each stage of work-integrated learning		
Stage I – preparatory	*Stage II – on-the-job training*	*Stage III – continuation of academic studies*
Functions of an academic and industry mentor		
Joint planning of the timelines for WIL, development of a joint educational program, syllabuses	Correction of students' actions	Development of syllabuses taking into account the knowledge gained in the workplace
Functions of the student		
Acquisition of passive theoretical knowledge	Application of knowledge and skills in the workplace: integration of theory with practice. Reflection on one's professional qualities, views, abilities	Application of practical skills learned in the workplace in the classroom
Learning outcomes		
Interprets facts through the prism of different theoretical points of view	Performs practical actions with the integration of theoretical connections	Justifies decisions on actions using the acquired practical skills
Methods of training and tools		
Methods of knowledge formation: conversation, lecture, work with a book. Practice-oriented methods: case method, brainstorming Teaching tools: material, visual, for laboratory research and experiments, IT technologies	Practical methods: Problem-based learning method, Project-based learning method	Methods of knowledge formation: conversation, lecture, work with a book. Practice-oriented methods: case method, brainstorming Teaching tools: material, visual, for laboratory research and experiments, IT technologies
Control methods		
Summative assessment: tests, essays, term papers	Summative and Formative Assessment: Portfolios, Projects	Summative assessment: tests, essays, term papers
⬇		
Evaluation Block		
Conducting a qualitative assessment of learning outcomes		
Control methods		
Levels of learning outcomes		
Low	Average	High

The target block includes the purposes and tasks of work-integrated learning at the university. In a general sense, the work-integrated learning framework aims to plan and organize work-integrated learning based on a combination of theoretical training and on-the-job training. This objective is detailed as the definition of the function of the academic and

industry mentor in the various stages of work-integrated learning, with a description of the methods of training and the results obtained.

The content-procedural block includes educational materials, methods of training and the organization of the pedagogical process. The content of training determines what theoretical knowledge and practical skills will be studied by the student. It is important that the content is up-to-date, meets the requirements of the modern educational program and the needs of the labor market. Methods of training determine the ways in which knowledge and skills will be transferred. Methods of training should combine a theoretical basis with practical tasks and exercises so that students can directly apply their knowledge and skills in practice. The organization of the pedagogical process determines how the training will be conducted. This includes lesson planning, the use of various forms of work (lectures, workshops, independent assignments, etc.) and the organization of interaction between teachers and students.

The content-process block of the framework helps to create effective teaching materials, choose appropriate methods of training and organize the pedagogical process in such a way as to ensure the maximum formation of knowledge and the development of students' skills.

This block shows the joint activities of the participants of work-integrated learning at the preparatory stage, the stage of on-the-job training and the stage of continuing academic training. Joint activity is determined by the interaction of an academic and industry mentor in the development of the content of the educational program, syllabuses, and adjustment of students' actions

The assessment block is based on the analysis of the results of control methods and thereby characterizes the level of achievement of students. It allows you to assess how successfully the student has mastered the educational material and achieved the set learning results.

Conclusion

Work-integrated learning is an approach to learning in which the workplace is used as a means of transferring knowledge. This article discussed the frameworks of work-integrated learning used in universities. Students are trained at the university and in industry organizations. It is important that all parties to the process initially understand the mission of work-integrated learning as a two-way relationship between the university and the industry organization, through which they work together, providing resources that will help students find and realize their potential. Work-integrated learning can take place on the territory of the university or directly in the industry organization. This requires consistent actions that prepare students for professional activity at the highest level.

The presented framework of work-integrated learning shows the participation of students, the university and the industry organization. It provides additional opportunities as the learner achieves significant progress in academic knowledge and skills and in practical work. Students with these qualities will be in high demand in the labor market, as the economy needs comprehensively competent workers who will be a valuable asset of human capital.

Students, industry and academic mentors are closely linked to learning outcomes. Students contribute to the host organisation by performing tasks that improve work or contribute to the development of specific projects within the organisation. The university, additionally informed by the current situation in the industry and the training of students in organizations, better prepares qualified graduates and can contribute to joint research work. Based on the core functions of work-integrated learning participants, the framework embeds learning outcomes and helps ensure that graduates are socially responsible, innovative, flexible, communicative and informed. Feedback is essential for monitoring the effectiveness of learning. The way students assimilate into a new work environment can affect the effectiveness of their learning. A carefully designed transition from academic learning to on-the-job learning

can help in creating an effective learning environment. This is facilitated by academic and industry mentors, who provide support through regular contact with students. The teaching methods used contribute to the understanding of the importance of studying outside the university. In on-the-job learning, students are expected to become active participants in the learning process, develop work-related skills, including effective communication, teamwork and problem-solving through practice and reflection.

Funding Information

This research has been is funded by the Science Committee of the Ministry of Education and Science of the Republic of Kazakhstan (Grant №. AP15473187 «Work-integrated learning framework at university»)

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

The empirical research conducted in this study was reviewed and approved by the appropriate Ethics Committee/Institutional Review Board, ensuring compliance with all relevant ethical guidelines for research involving human subjects

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DOI:10.59787/2413-5488-2024-48-4-34-43

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PEDAGOGICAL PRINCIPLES FORMATION OF INCLUSIVE COMPETENCE OF FUTURE SPECIAL TEACHERS

Abstract: In the last decade, inclusive education has become the major integral parts of our lives. There are many studies on its implementation in the education system of Kazakhstan. However, there are very few studies of the inclusive competence of an inclusive education special teachers (defectologists). In the context of Kazakhstan, it is important to study the development of a model of knowledge and competencies necessary for the training of special teachers in inclusive education.How we can inclusive education be related to the inclusion of scientific research in the quality assessment system of an educational institution. Questions arise how to link profiles in inclusive education with inclusive education. The main aim of the research is to distinguish inclusive education as a new model of education and propose an individual methodology or a set of recommendations on the development of special teachers' professional competencies. Therefore, we consider the model and principles for the development of special competencies of future special teachers in the context of inclusive education. As a result of analysis and formation of a model we gave recommendations for analyzing the pedagogical issues and formation of future special teachers' inclusive competencies. The results of the research can be used in creating educational programs in an inclusive education and consideration of methodology development for inclusive training special teachers for inclusive schools.

Key words: inclusive education, inclusive competence, professional competencies, future inclusive special teachers, defectologists, modelling,pedagogical activities, methodology.

Introduction

The problem of general pedagogical disciplines in the field of inclusive education is to understand the meaning and patterns of development and formation of personality in the inclusive classroom, in the group of preschool education, in the student body. In a single educational space for different children studying in different educational programs. It is necessary to use special tools and special conditions for learning activities. From the point of view of the formation of the individual, research is defined as the main task of science. Our republic has proposed this educational sphereto study from perspectives of modern development of the society. In the context of reforming the system of financing inclusive education, there should be a mechanism for distributing funds between state and inclusive educational organizations. The study also has a legal aspect of the new situation in education. Referring to the analysis of international acts allows to show the essence of the idea of inclusive education and its manifestation on a global scale. The country still lacks a clear methodology for training special teachers in inclusive education.

Opinions on the formation of inclusive competence, professional competence of the future special teachers (defectologists) are reflected in the works of foreign and domestic scientists, teachers, psychologists who are engaged in the training of professionals. In particular, Ablyazimova (2010), Barsay (2010), Espenbetov (2010), Kenjebekov (2005) and others. Scientists have studied the theoretical and practical foundations of the formation of

special teachers' professional competence. Scientist Kenjebekov (2005) doctoral research is on competence explains the readiness and ability of an individual to perform certain objectives in accordance with theoretical knowledge and practical experience. We should note that the concept of "readiness" is used to define the meaning of the situation, as "everything is done, everything is ready for something", and the ability is used to express the ability to perform a particular action. These meanings convey the meaning and content of the competence. Competence is formed on the basis of unity of theory and practice.

The main goal of inclusive education is to create the necessary conditions for education and access to education for all children, regardless of their mental and physical abilities, social and economic status, culture, mother tongue, previous academic achievements, personal characteristics and ensure access to education.

The subject of inclusive education pedagogy is the teaching process and educating people with special needs in inclusion and opportunities in general educational process context. The modern approaches of the inclusive education is a personality with special needs and opportunities in teaching. Ablyazimova (2010) stated the fact that personality problems and development in special organized environment. It is one of fundamental and complex issues of pedagogical theories and practice.

Inclusive competence is the ability to master and implement the principles and features of inclusive education. Achieving this is associated with ensuring that the educational environment, the technology of the educational process meets the needs of social development of a particular child's at particular stages of his development. According to Espenbetov (2010) transforming education into inclusive education requires collective thinking and action towards social justice, taking into account the learning potential of each student.

Therefore, it is necessary to develop new humanities technologies of interaction that will teach students for listening and acquisition of different positions of various profiled specialists, to act in children motivation, effectively coordinated for a certain time. The study of main concepts of inclusive education showed the special needs in the primary steps aimed at teaching as a symbolic principle.

Kirillova and Ibragimov (2016) stated that the terms of 'inclusive professional competence'should be considered as main component of professional competence for special teachers. As it is a complex direction and newly developed trend in the society, it needs to consider from different perspectives. The content and structure can also be considered through similar pedagogical abilities, but from a position of the general and inclusive education.

In the context of inclusive pedagogy, it is necessary to study and describe situations that reduce barriers to the development of the personality of students with developmental disabilities. According to Fernandez et al. (2012), the stimulatation the personal development of the child includes:

- involvement of a child with special needs in various cognitive, practical, creative, social activities;
- early inclusion of a child with special needs in the educational process;
- change the principles and procedures, outcomes for assessment and student certification who are studying under such education programs;
- a new humanistic system of values aimed at correctness and tolerance;
- providing students with the opportunity to study according to individual curricula;
- change of the system of personal, psychological, pedagogical and additional support.

According to Polat (2011) effectivenes and positive results of integrated learning is possible only through planned and multi-faceted forms of special training and retraining of teachers in general education and special (health) institutions. Special teachers must be specially trained to provide corrective assistance in new situations, ie in the context of integrated learning. The purpose of such training is focused on equipping the teachers of

secondary schools and kindergartens with defectological knowledge and special pedagogical technologies that allow to provide qualified education to children with special needs.

Kim (2011) considers that studying the laws of human development in the framework of educational relations established in the system of inclusive education. It should be noted that the activities of educational organizations increase the capacity of the inclusive environment to address all the diversity of educational objectives defined by state standards. In addition, systematic pedagogical action is not possible without a well-chosen strategy. When each line of their implementation has a conceptually based position, it is clear that the educational resource of the environment itself will not be realized. Hill and Brown (2013) defined that the solution to the problem of tolerance in an inclusive educational institution includes:

1) formation of tolerance in children with special needs, learning how to resolve conflicts, study of the national characteristics of other people;

2) exchange the experience of ideas of tolerance, behaviour in the social environment of the educational institution.

3) development and assistance of tolerance and self-awareness among parents, teachers and professionals working with children;

The main goal of the teacher's work in inclusive education is to overcome negative social phenomena (xenophobia, addictive behavior, aggression, intolerance, lack of independence, lack of initiative and creative approach to life. It is impossible to understand the pedagogical process taking place in the system of inclusive education without understanding the essence and characteristics of this system, without studying the elements that distinguish it from the general education system.

Materials and methods

The pedagogical process is a purposeful and organized interaction of adults and children, realizing the goals of education and upbringing in the pedagogical system. Paying attention to the designation of the contradiction, we have determined the purpose of the study is developed through substantiation of the unique methodology and modelling for the formation of professional competencies of special teachers in modern trends of education in the study of elective courses of an inclusive training and orientation.

For this purpose, a number of sources from open access scientific databases were selected and analyzed. When studying and analyzing the sources, the authors used the deconstruction method, which consists in changing the sequence of the author's thought and the decriptive method, which is based on “descriptives” - reference words, word combinations. This method allows to concretize the course of thought, to identify key words, to emphasize the most vivid and important points.

Taking into account the risks, the principles of organizing the pedagogical process in an inclusive education institution were formulated.

Results and discussion

One of research spheres of inclusive education is research of the organization peculiarities of teaching and training in an inclusive class is a group work. The unity of the pedagogical training process means the unity of teaching and education. The reason does not exclude their peculiarities. The description and identification of this peculiarities is based on e methodological principles of the primary functions of training and upbringing. This process forms the audience and defines to the problem solution of training and development simultaneously. The content of education is differentiated by its formation of theoretical concepts, scientific ideas, laws, basic and general educational competencies, students’ skills and capabilities.

The concepts of inclusive education system should be realized through the discovery of its elements. Not only teachers, students and subjects of education, but also parents become mandatory participants in this system (primarily children) according to the specific composition of disabled people. They need now only knowledge and to adapt in the society, they also need to develop their abilities and skills. The complex development of skills suppose the development of their special training and special training programs. Because sometimes they have to be involved in the learning process to help raise your child. The specifics of special teachers' inclusive competence and related objectives (for example, the participation of special teachers in the process of rehabilitation of people with disabilities) involve a wide range of professionals in the process of educational interaction.

Inclusive education allows all children to take an active part in school and school life in preschool. Inclusive education defines the equal rights of students and allows them to participate in team activities. Allows you to develop the necessary skills to communicate with people. Inclusive education is the development of a general educational process that provides education for children with special needs, taking into account the needs of all children. Inclusive education seeks to develop new areas of teaching and learning to meet the needs of children in the learning process. If changes in inclusive education are effective in teaching and learning, so will the situation of children with special needs. Children in schools that have opened inclusive education will have the opportunity to learn about human rights.

The marked-out inclusive pedagogical abilities consist of three main components of inclusive competence:

1) reflexiveness (3; 6; 7 groups) – traditional skills of special teachers which are based on their introspective, pedagogic, self-development, self-improvement inclusive pedagogical activities and skills based special programs.

2) cognition (1; 2; 8 groups) based on basic and special competencies, abilities in basic activities, knowledge development, skill-based pedagogical activities in scope of inclusive education conditions.

3) personality-based (4; 5; 9 groups) - it is substantiated with psychological aspect, such as: motives, motivation and personal attitudes towards children with special needs. It is subdivided into students' emotional, motivational characteristics and activities.

The development achievements of inclusive education is realization of the equal rights of all necessary

categories of personal quality education. The objectives of the inclusive education development are:

- substantiation of regular organizational and mechanisms for inclusive education development:
- improvement of methodological, educational frameworks for the inclusive education content, adaptation of curriculum framework and course-programs, teaching materials and textbooks;
- introduction of criteria-based assessment system of students' academic achievements;

provision of personal correctional and socio-psychological supports;

- creation of favorable educational conditions for students as active members of school who have high self-esteem and motivated to learning and socialization;
- integration of subjects according to students’ special needs;
- taking into account the students adaptation to the social environment;
- regulation of programs according to principles of basic state program;

30 - creation of "barrier-free access to educational environment, i.e provision for students with compensatory means;

A standard special education program has been developed for the organization of education for students with special needs. They provide general education process taking into

account all the needs of children for ensuring their education process. Inclusive education looks for conditions in the inclusion of new areas for teaching and learning that meet the children's needs in the learning environment. Children in such schools have inclusive education programs which give opportunities to learn social norms and human rights.

All the described conditions need to develop teachers' professional competencies. The researchers Brandon and Charlton (2011) define "the future teacher's competence and the teacher's mastery of all theories and practices related to their specialty in the educational process organization sphere, the abilities and skills to of working with students in developing of personality". Researchers Brandon and Charlton (2011) also defines "the competence of the future teacher - the teacher's mastery of all the ories and practices related to their specialty in the organization of the educational process, the ability to work with students in the formation of personality".

According to Kudaybergeneva (2011) «competence: firstly, is inherent in the person and it depends on the person's own enthusiasm; secondly, it is considered as the possession of certain qualities and provides human action through certain preconditions. So, competence: as an action, a prerequisite for educational training is the builder of the "anatomy" of competence. The content of competence is revealed through a system of actions in the event of a sudden event, the authority to intervene in the activity (popular, selective), the adaptation of behavior to a particular situation, the quality characteristics of subjective work». The scientific literature analysis showed that professional competencies of a future special teacher is a very complex issue. They are related to philosophical, pedagogical, psychological, sociological theories and methodology of vocational training as: androgynical, acmeological, personal and labor psychological principles, etc.

Definition by Kaskatayeva (2009) described as a special teacher's professional inclusive competence is based on the characteristics of personality, professional qualities of a student. It mostly includes teachers' professional competencies that ensure effective and expedient professional activities implementations in various forms of inclusive training. It is also characterized as student's professional organizational knowledge, competencies, abilities, awareness skills adapting in pedagogical training, analyzing, assessing and predicting his own results of pedagogical activities.

These outskirts and predictions of the professional competence of future special teachers' creates principles and prerequisites for assessing and developing a methodological understanding for developing professional competencies of future specialists in the study of elective and basiccourses of inclusive orientation as a means of professional training. The current trends in inclusive education development that entail the requirements for speciality qualifications and its core professional competencies predicts integrated training of the educational programs and higher academic mobility among institutions. It has not been sufficiently stated and studied according to its specificity. The competency-based approach has its specific trends as modeling and structuring the content according to the results of training and retraining through presenting as norms and regulations of higher educational sphere. The purpose of competence-based approach is directed to new developmental aspects of a methodology for the formation of future special teachers' inclusiveprofessional training and his core professional competencies in the implementation of elective courses as means of professional training. Nowadays, it is also recognized in the content of programs. We deal with competency-based training, as it is advisable of using the competency-based approach in determining the levels and results of special training.

Competency-based approach allowed us developing the model on the formation of special teachers' professional competence of an inclusive orientation through special training programs, including the basic subcomponents and structural elements (Figure 1.):

Figure 1

Model of the formation of professional competencies offuture special teacher in an inclusive training

- the cognitive-logical component of professional competencies of special teachers. It implies the possessing the compulsory and specific, theoretical and practical awareness in the implementation and application of effective activities and skills in special trade;

- the operational-organizational components professional competencies involving the effectiveness of using of gained knowledge in professional training. Itis determined by complexity of specific skills in practice: possessing competencies and abilities in inclusive pedagogical thinking, practical skills in the implementation of effectivenees of pedagogical process;

- the axiological-philosophical component involving the abilities in cooperatation and communication with other social groups effectively: building the effective communicative acts, cooperation with the staff and colleagues in maintaining the favorable conditions in the implementation of professional goals and results of educational activities;

- continuous- lifelong training is supposed in the willingness of designation and implementatoion educational space during the professional career and ensuring successful professional activities and competitiveness among the staff members.

- a criterive-based component including value-oriented, motivational-based, content-based, performance-based criterial asessment, selection of diagnostic instruments, sets of criterial assessment, formulation of descriptors for development levels of professional sphere and competencies, the relation matrix of professional competencies in inclusive orientations, educational assessment. They allow assessment and monitoring the of professional training

quality and assists improving the monitoring quality of the process effectiveness on forming students' skills and abilities of inclusive training;

- technological-methodological component can be selected by professionals within the specialization of the framework context. In the achievement of required levels of professional competency formation and its outstanding qualitative results. This components is developed through relevant and important principles and factors enlarging its structuring the teaching material content that can be carried out throughout the inclusive education. It is based in pedagogical and psychological principles and standards. The effective methodology of training through teaching materials and means is aimed at independent choices of specialists and personal characteristics of each trainee.

The relevant part of this technological component is rating systems for learning outcomes assessment. In this connection, teachers like using the selected methods for using the rating controls. This system also has allowed to raise students activities in positive context and the indicators chosen can be effective through the use of rating systems. It was proven in many educational institutions all over the world.

Our Model on forming professional competency components through elective courses taking onto account the basic compulsory components is illustrated in the following Figure 1. The Model is based on the principles of general education and state norms.

In the initial stages students are prepared to sufficient levels of theoretical basis and knowledge. The directed skills, competencies and abilities should be formed according to experience-based training ccumulated in practice. They are based on integrative learning, philosophy, psychology and pedagogical subjects. They are correlated with quality criteria indicators for students' knowledge development and activities. Communication skills are characterizeed by assessing the knowledge through monologues, dialogues in achieving communicative functions and objectives. It is advisable to organize favourable conditions for social interaction in an inclusive environment. Students work in a smallteam,solve the questions related to the issues of relationships among partners, family members, conflicts in society in constructive ways through cooperation, group work of teamwork. They are focused on their own tolerance or patience human values, respect for each other, acceptaning others’s beliefs and ideas. They form their communication acts and activities and skills. It is necessary as their knowledge and skills are assessed through the rating control by means of activities, reflection and skill formation. They also do individual research work and activities through the course content.

They are focused on the current issues, learn the standards of education. The initial stage forms students as future professionals who are ready to solve related problems to inclusive education. The scope and content of education uses competence-based approach. This is the main directions of special teacher training. The following course and components of elective courses are focused on personal growth, cognitive understanding, communicative skills, creative abilities and general humanity and cultural spheres of the activities of modern specialists. The model considers all aspects of personal development in the society. The Model developed by us for the formation of future specialists' professional training and its subcompetencies in an inclusive environment through educationalpositions an example helps to generate and update the content and professional training.

Borodina (20140 stated the fact that competence-based approach is considered as a universal phenomena and mechanism of generating and updating the education in the era of modernization. It helped to make significant structural and content changes inour professional training content. Each of subcomponents of our model based on previous models for the formation of future specialists; professional competencies through elective courses in inclusive directions solvecertain parts of our main pedagogical goals and perspectives. The results of the stud is predicated as forming and updating the content of professional training.

The formation and development process in inclusive training for special teachers' professional competencies can be considered as complex integrative and integral processes including cognitive aspects, personal development, activity-based training, motivational-psychological component. The levels of general development of inclusive cultural and activitity based content is directed to the formation of basic skills and abilitesin professional communication and the further need for life-learning and continuous education. The model developed for the professional competency formation substantiates and creates:

- modelling the content for mastering students' basic theoretical knowledge that is necessary in effectiveness of training professional activities;
- it predisposes the effective using of acquired skills and knowledge in training the special teachers as future professionals;
- the future professionals should be ready in designation and implementation of their own educational training and experience throughout their lives and ensuring successfull professional competitiveness;
- conditions require from students as future professionals being able to cooperate with other social groups effectively in building effective communication and cooperation with any professional team in maintaining the favorable conditions fro inclusive environment to achieve teaching professional goals.

The model based the formation of future professionals as special school teachers professional competency as a whole is developed through basic and elective course programs. Its component and subcopmponents are not only directed to the formation of professional inclusive competencies of special teachers, but also can be considered as a diagnostic toolkit helps monitoring the future special teachers' professional training quality. It also contributes to the effective process of formingspecial teachers' professional competency through criterial assessment. The model for in the study of elective courses has technological basis whenthe content of teaching materialsand teaching means are selected a certain criteria. Teachers are responsible for the selection and use of teaching materialsand teaching means in the era of digital society. Technological component takes into account the advances and development of modernization.

The model also is developed through principles of setting the learning outcome. The rating system is favourable in shaping the learning outcomes as tested means of assessment worldwide. It makes us possible taking into account allcriterial development of the special teachers and their professional activities related to knowledge acquisition , skill development, and many other indicators of professional competencies. The model on the formation of special teachers' professional competencies in the study in an inclusive education allows for the use in interconnection of all components widespread especially on forming students' professional skills. It contributes to the professional activities organization where future special teachers can choose elective disciplines with a focus on their own professional competencies.

Conclusion

Inclusive competence is a rather new concept which emergence is caused by development of inclusive education in the world, and also competence-based approach distribution in education. The number of works devoted to inclusive competence is very few. In the process of research, through the development of the Model for the formation of professional competencies of future special teachers in inclusive education. This is developed through the use of elective disciplines of the study of an inclusive orientation. We obtained the following achievements and formulated the following conclusions and recommendations for special training programs for inclusive education:

- problems, topical issues and contradictions that hinder the development of the formation process of special teachers' professional competencies among students and systematized scientific knowledge in this direction;

- the theory of higher education, especially in training specialists in inclusive education is enriched with a scientifically based model of the formation of special teachers' inclusive competencies in the study of elective disciplines of an inclusive orientation;

- a set of components that contribute to the successful developed model implementation on the formation of students' professional competencies in the study of elective courses in inclusive orientation, ensuring the goals; objectives, adequacy and meaning of its content, methodology and the expected results of the effecient formation of special teachers' inclusive professional competencies in the system of higher professional education.

The Model of formation of special teachers' inclusive professional competencies in the study of elective disciplines of an inclusive orientation provides a theoretical and methodological basis for new research in various areas of improving the process of forming students' professional competencies. In our study, a Model for the formation of future special teachers' inclusive professional competencies in the study of elective disciplines of an inclusive orientation has been developed, in the structure of which conditions are laid down for updating methodological materials and recommendations, curricula, lecture courses, practical classes, laboratory workshops that ensure the effectiveness of the process of forming future special teachers' inclusive professional competencies in the study of elective disciplines. The developed Model for the formation of future special teachers' inclusive professional competencies in the study of elective disciplines of an inclusive orientation is recommended for wide practical application at universities and advanced training courses for university teachers.

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

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DOI:10.59787/2413-5488-2024-48-4-44-51

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THE USE OF MEDIA AND DIGITAL TECHNOLOGIES IN LEARNING ENGLISH AS A FOREIGN LANGUAGE

Abstract: English has become a global language and has taken a significant place in the world. With the advent of globalization, the demand for learning English as a foreign language (FL) has increased dramatically. The use of media and digital technologies is becoming more and more popular in learning English as FL. In this article, we will explore the use of media and digital technologies in learning English as FL. The article discusses the increasing popularity of digital resources such as learning apps, online platforms, and multimedia tools among young learners and adults. It emphasizes the convenience and suitability of these resources in facilitating language acquisition and enhancing English proficiency. Furthermore, the article explores the importance of learner interest and satisfaction in utilizing social media for language learning.

Keywords: digital technologies, educational tool, Internet, motivation, classroom, learners, educational media.

Introduction

Today a rapidly developed technology in the world requires anyone to use media and digital tools for personal and social development. A widespread availability of digital technology and internet access may play a significat role in learning English especially for those who are studying the target language as a second one or a foreign. In learning English language as a foreign has started to be popular among young adolescents and adults while working with new innovative technologies and/or accepting news from mass media. As we can see, learning English involves a range of apps, digital tools, and internet resources which increases every day and becomes a common part of daily routine.

The internet apps might be more practical and appropriate for the learners, which could speed up their education and help them become more fluent in English. There is no doubt that learning with the help of digital technologies and/or including the media apps will seem to be more interesting and exciting than just learning the rules or practicing English with a non-native speaker. At the beginning, the use of games, live videos, or social media can be challenging for learners, albeit further the learning process might be motivational, interesting, interactive, and personalized. For learners whose daily life frequently include media and work with digital technologies may have a constant practical input in English to listen to authentic language and sound as a native speaker. This may undoubtedly promote speaking and listening skills. With the help of online tools, students can learn English by using real-life materials and staying in constant communication with classmates and language specialists around the world.

Literature review

Interest to learn with mass media. Literature review determines that “interest” in the learning procedure while applying social networking sites is a conclusive factor for learners as the learners should be organized to study the learning material by their own (see e.g., Rotgans & Schmidt, 2014; Hidayat et al., 2022). In addition to, some researchers (Hidi & Renninger, 2006; Rotgans & Schmidt, 2014) claim that if the interest of the learner is higher, the learning

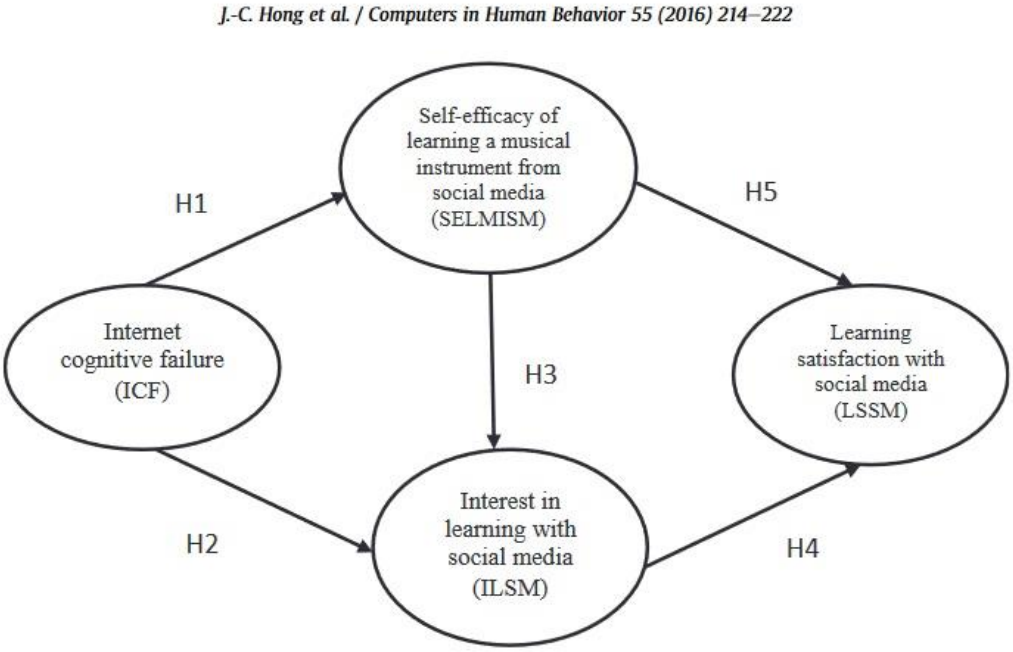
material can promote simple the comprehension and the learning process will go smoothly and simple. Interestingly, according to Hong et al. (2016) the interest to the learning with the help of media can furthermore foresee the learning satisfaction with the great advantage of mass media.

To satisfy the learning with the mass media. Hong et al. (2016) define that contentment in studying while using mass media is significantly useful as the "quality of online programs and student performance" (p. 215) are usually assessed in the learning process. The researchers claim that the learning satisfaction via social media should provide the learners expectation that can be corresponded to the learners' experience and further learning outcomes. The expectation and the learners' achievement should be crucial and significant in the learning satisfaction with the social media as this predicts self-efficacy of the learner.

Internet cognitive failure. According to Hong et al. (2016) internet cognitive failure is defined as the crucial aspect in the learning process, where the learner is able to cope with the internet drawbacks. This ability is showing how the learners is "capable of completing" the problems while working with the internet and how this dynamic aspect affects the learners' "cognitive and affective" (p. 215) elements in studying.

Figure 1

Conceptual framework



Self-efficacy of learning English from social networks media. The definition of learning English with self-efficacy is giving yourself the chance to interact with the language in appropriate and meaningful ways. Media and digital technologies may additionally be utilized to add interest to the educational procedure. In general, the incorporation of computerized media and technological devices in the English classroom can offer pupils a variety of chances to enhance their language proficiency in the future and inspire them to speak the language smoothly and interact with it in real-life contexts. The development of technology is vital in enabling students to use their academic knowledge to gain employment in a global workforce.

Technology is a true educational tool that facilitates the process of learning and aids in the education of students (Hong et al., 2016).

Likewise, Eady and Wilson (2004) highlighted the significance of music in academic success, motivation and creative growth. They argued that music enhances learning and enables learners to achieve their goals more effectively. They believe that music is beneficial for all aspects of education because it contributes to the development of key skills such as self-esteem and creativity (Eady & Wilson, 2004). Stansell (2005) pointed out that music and language share several cognitive processes, including melodic recognition, timbre discrimination, rhythm, tonality and perception of symbols in context. Likewise, Horn (2007) suggested that music could enrich vocabulary and improve articulation and pronunciation. Mora (2000) asserts that music and language should be integrated into the teaching of English as a Foreign Language (EFL). Hence, songs can help learners remember words and phrases, improve pronunciation and language acquisition. Musicality of speech has a significant impact on EFL students' pronunciation skills and to the overall language acquisition process.

According to Strait and Kraus (2011), musicians benefit from perception procedures related to hearing and brain processing of speech in noisy environments. Additionally, they contended that music constituted a possible advantage for auditory training, since musicians have expertise in activating auditory focus on language. Ettlinger et al. (2011) highlighted the unique functions of memory, unconsciously learned information, and related brain structures that play a role in learning linguistic or musical grammar. Milovanov & Tervaniemi (2011) emphasized the positive impact of musical ability on language learning, including learning a second language.

Regarding thorough analysis by Koelsch (2011) incorporates research on language and music comprehension from neurological function and brain scanning into a more complete '*neurocognitive model of music perception*'. A particular focus is on analyzing the parallels and discrepancies between musical and linguistic grammar. Schon & Francois (2011) reviewed a number of electrophysiological studies that examined the separation of linguistic from musical information in speech and how to segment the speech.

This article aims to provide the evidences of how technology and media can help learners improve their language skills. A number of researchers and learners believe that learning process is more effective with the use of internet and innovation technologies as these tools offer the learner an access to the authentic language input as well as connect with other learners and speakers that make them motivated and engaged into the language learning process.

It will also discuss the advantages of using these technologies, such as providing learners with the access to authentic and up-to-date language input, allowing for personalized learning experiences, and enabling learners to practice their language skills in a more interactive and engaging way. Moreover, the article will examine the challenges and limitations method teaching languages through the use of the media and technological advances, such as the need for reliable internet access, the potential for distractions, and the lack of face-to-face interaction with native speakers.

Methodology, tools and procedure

The utilized tools have been adopted from Hong et al. (2016) with sight modification. The modified version of the questionnaire was verified several times at first we tested some items among two students and then among three ones. Thus, the whole content of the items belonging to one factor has been adapted and modified regarding the aim of our research study. The collection of the data was under the use of computer-based analysis. Before the survey, all participants were asked for the permission to take part in the assessment voluntary thus, those, who agreed were instructed in their native language. All participated students had been

provided a certain instruction and assistance. The participants of our research study were the students from grades eighth and ninth all of them were asked of taking part in the survey so those who agreed had a great interest and a wish to check the frequency of using digital technologies in learning English.

The survey was voluntary and anonymous there was not any pressure to take part in the measurement process. This assessment was conducted in the secondary school of Pavlodar region during the teaching training practice for teaching as a profession. All participants responded to the survey using the personal computers in the classroom during the measurement procedure if the respondent had a question the instructor and/or the teacher in the class clarified and instructed the meaning of the content in detail to each learner individually.

The learners were well instructed before the survey so the participation was voluntary. The voluntary participants performed a computer based assessment with certain understanding and a wish of interest to the use of media and digital technologies is becoming more and more popular in learning English as FL. The procedure was guided by using the Google Drive app discreetly. Even though the majority of the participants were young learners, the reliability of the items was α=.747 for the instruments, which is acceptable. Data was gathered in 2023 during practice at Pavlodar's urban secondary school.

Table 1
Reliability

The Cronbach's Alpha	N = (number of items)
.747	18

The following research questions need to be analyzed and examined in regard of the relation to the previously mentioned concerns and aspects:
1) How often are digital tools and media used when learning English as a foreign language?
2) How can gender differences in media and digital technology usage affect learning English as a foreign language?
3) How do media and digital technology factors relate to each other?

Results

Research Question: 1 – How often are digital tools and media used when learning English as a foreign language?

Table 2.
Gender differences in using factors

Factor in using media and digital technologies in learning English as FL	*N*	*Mean*	*SD*
Interest in learning with social media	51	**3.58**	.600
Learning satisfaction with social media	51	3.44	.983
Internet cognitive failure	51	3.04	.792
Self-efficacy of learning English from social media	51	3.07	.837

The findings demonstrated that, despite occasional Internet cognitive failure, young learners are interested in and generally satisfied with using social media for learning English. They also use media and digital technology regularly for self-efficacy. See Table 1, which displays the frequency of the most factors, for further information.

Research Question: 2 – How can gender differences in media and digital technology usage affect learning English as a foreign language?

Table 3.

Gender differences in using factors

Factor in using media and digital technologies in learning English as FL	*Gender*	*N*	*M*	*SD*
Interest in learning with social media	Male	**27**	3.36	.713
	Female	**24**	3.83	.328
Learning satisfaction with social media	Male	**27**	3.13	1.109
	Female	**24**	3.78	.744
Internet cognitive failure	Male	**27**	3.14	.902
	Female	**24**	2.94	.691
Self-efficacy of learning English from social media	Male	**27**	3.11	.876
	Female	**24**	3.03	.850

p>.05 – significant value

The results of gender differences did not reveal any significant differences among males and females. All four factors showed that for both the use of media and digital technologies in learning English the results of p-value were higher. Although we could notice that even the number of males was higher the interest and learning satisfaction among females is higher than males, but lower when the females met a failure in internet and self-efficacy of learning from digital technologies and media.

Research Question: 3 – How do media and digital technology factors relate to each other?

Regarding our third research question, we may see that correlation between the factors '*Learning satisfaction with social media*' and '*Interest in learning with social media*' is significantly strong r=.774 which is also proved by the the p-value is smaller .01. However, the relation between '*Internet cognitive failure*' and '*Interest in learning with social media*' is negatively weak but significant r=-.373. Although positively moderate but significant as well between '*Self-efficacy of learning English from social media*' and '*Interest in learning with social media*' r=.414 and *Learning satisfaction with social media*' r=.437.

Table 4.

Correlation of the factors

	Learning satisfaction with social media	Internet cognitive failure	Self-efficacy of learning English from social media
Interest in learning with social media	**.774****	**-.373****	**.414****
Learning satisfaction with social media		-.251	**.437****

Internet failure	cognitive	-.188

****p<0.01**

The following may indicate that the factors associated with '*Learning satisfaction with social media*' and the ones mentioned under '*Interest in learning with social media*' are critical components for younger students. This may also demonstrate that, as students are genuinely interested in the course of action, a strong desire to learn something new might serve as a powerful incentive for subsequent academic fulfillment.

Discussion

Types of media and digital technologies for learning a FL. Literature defines that (Laurillard, 2002) the idea of media is expanded through the analytic classification of educational media. Similar to this, Laurillard (2002) classified instructional media into five categories: interactive, narrative, communicative, adaptive, and productive. For instance, interactive media encourages research and discovery, whereas narrative media facilitates involvement and comprehension. While interactive media aids in conversation and debate, productive media helps with idea articulation, modeling, and presentation, adaptive media supports experimentation and skill practice.

Table 5

Laurillard's classification of educational media

Type of media	Examples of media, media technologies
Narrative media	Print, graphic, image, audio cassette, CD, and DVD Television, radio and films
Interactive media	Hypertext, hypermedia, and multimedia. Online resources that contain text, images, video, audio, or any combination of these elements.
Adaptive media	Teaching programmes, virtual environments, virtual worlds
Communicative media	Computer mediated conferencing; digital document discussion environments, videoconferencing, and audio conferencing are all terms used to describe computer mediated conferencing.
Productive media	Micro-worlds, product, modelling, animation, text processing

Challenges for using media and digital technologies in learning. One of the biggest challenges to digital learning is the lack of educational facilities equipped with digital devices. Accessibility to digital technology and Internet are significant challenges that hinder online learning and exasperate students. If the access to the Internet is limited at home or the students cannot afford digital devices the failure may result in low eagerness to learn further. Therefore, we believe for the students from low-socio economical background the government should provide digital devices with the free access to the Internet.

Literacy in using digital devices such as computers, laptops, and cell phones and the use of Internet is a vital necessity for current e-learning process. Although the difficulties in using ICT and understanding learning may rise a fundamental barrier between learner and teacher as well as may evolve some problems in delivering virtual learning. In addition to, the age of the teacher and his or her desire to use ICT in the classroom may also affect his or her ability to adopt digital technology in learning with all modern and current requirements of the process. This may further affect self-efficacy of the teacher as low self-efficacy of the teacher

and the lack of pedagogical understanding can cause some drawback issues for effective integrating and implementing digital technologies in the classroom. Preparing teachers for mobile educational environments is critical, especially professional qualities that support their motivation and technical skills in integrating mobile technologies into the educational environment.

Conclusion

In conclusion, we may define that use of media and digital technologies in English language learning has the potential to revolutionize the ways of learner's access and engage young learners to the language. Children in school must have access to current and accurate spoken language in order to customize their learning experiences and improve their chances of interacting with speakers and other learners. Technology can help learners to improve their language skills and develop cultural competence. There are countless opportunities to increase knowledge of language and cultural competency, as long as educators and learners continue to use technology as an instrument for language learning. All things considered, the use of media and digital technology have completely changed how English is taught to students who may then interact and make use of flexibility, accessibility, and engagement in their language-learning process.

Conflict of Interest Statement

The authors have no potential conflict of interest concerning the research, authorship or publication of this article.

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DOI:10.59787/2413-5488-2024-48-4-52-66

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EXPLORING KAZAKH EFL TEACHERS' PROFESSIONAL IDENTITY: A QUANTITATIVE STUDY

Abstract: This study's extensive quantitative research design to investigate the professional identities of in-service EFL teachers in Kazakhstan and Turkistan makes it stand out. A comprehensive survey, unparalleled in scope and exhaustiveness, was distributed to 470 English instructors in 45 state schools, offering an extensive synopsis of how these educators see their professional identities. The survey findings provide insights into several professional identity factors, including the propensity to teach, act as role models, and establish productive learning settings. The results show that participants' professional identities were generally average, with major exceptions for knowledge-sharing and role modeling. Simultaneously, less emphasis was placed on recognizing students' original language culture and establishing a favorable classroom atmosphere. The study also looks at how different professional identities are within qualification categories, and it finds statistically significant variances that highlight how teachers' self-perception and professional growth are influenced by their educational background. These findings have implications for teacher education and professional development initiatives and a deeper knowledge of the elements influencing EFL instructors' professional identities in Kazakhstan.

Keywords: Professional Identity, EFL Teachers, Quantitative Research, Teacher Development, Survey Study

Introduction

In recent years, in-service EFL instructors' perception and evaluation of professional identity have garnered increasing attention. This interest results from the realization that better levels of work satisfaction, dedication to teaching, and readiness for ongoing professional growth are associated with a strong sense of self as a professional (Day, 2011). Nevertheless, more empirical research that quantitatively analyzes the professional identity of in-service EFL teachers and investigates how credentials and teaching experience influence this identity is still desperately needed, even in light of the growing attention this field is receiving (Pennington & Richards, 2016). Our research attempts to close this gap and add to this sector's expanding body of knowledge.

By statistically identifying the professional identity of in-service EFL instructors, this study seeks to add to the body of literature already in existence. The study specifically aims to respond to the following research questions:

(1) How do in-service EFL teachers assess their level of professional identity?

(2) How do in-service EFL teachers' levels of professional identity differ depending on their qualification categories?

(3) How do in-service teachers' levels of professional identity vary according to their years of teaching experience? Addressing these questions is essential for gaining a deeper understanding of the factors that influence professional identity among EFL teachers and for informing the development of targeted professional development programs.

The current study aims to evaluate in-service EFL teachers' professional identities objectively and investigate how these identities differ based on their backgrounds and experiences in the classroom. By addressing the previously mentioned research issues, this

study attempts to offer important insights into the elements that affect professional identity among EFL teachers. The results of this study should add to the body of knowledge on professional identity in EFL teaching and guide the creation of focused professional development initiatives that aid in the advancement of EFL instructors.

EFL teachers' professional identities are intricate and multidimensional constructs impacted by various circumstances, such as their training and prior teaching experience. Understanding how these elements influence professional identity is crucial to assisting instructors in developing professionally and raising the standard of EFL instruction. By offering a quantitative examination of the professional identities of in-service EFL instructors and concentrating on the influence of credentials and teaching experience, this study seeks to close the gap in the literature.

Literature review

In the context of teaching EFL, a teacher's professional identity refers to how they view themselves and their positions within the educational community and among their students and colleagues. Pennington and Richards (2016) claim that the interaction of several elements, such as language ability, cultural sensitivity, and the demands of the teaching profession, makes professional identity in EFL especially difficult . The conventions and expectations of their local educational systems and the more general international standards related to English language instruction (ELT) are frequently at odds with EFL teachers. This dualism may present particular difficulties in forming and upkeep of a coherent professional identity.

The cultural aspects of professional identity in EFL teaching are further highlighted by Duff and Uchida (1997), who point out that educators frequently have to balance their own cultural origins with the expectations of their students and the communities in which they work. Teachers' views about their jobs, methods of instruction, and relationships with students can be influenced by this process of negotiation and adaptation, which is essential to developing a professional identity.

Positive outcomes in teaching, such as increased work satisfaction, a strong sense of commitment to the field, and a readiness to participate in ongoing professional development, are associated with a strong sense of professional identity (Pennington, 2014). EFL instructors' professional identities influence how they approach teaching languages, how they run their classrooms, and how well they interact with students from different linguistic and cultural backgrounds. Teachers with a clear sense of themselves as professionals are likelier to use cutting-edge techniques, evaluate their work critically, and look for chances to advance their careers (Kelchtermans, 2009).

On the other hand, educators who feel conflicted or unclear about their professional identity may find it difficult to stay motivated, have less work satisfaction, and become more likely to burn out (Day & Gu, 2010). This emphasizes how crucial it is to help EFL teachers build a solid professional identity by providing specialized professional development opportunities and institutional support. A number of variables influence the formation and growth of EFL instructors' professional identities. These consist of an educator's educational background, teaching experience, and the sociocultural setting in which they operate. Every one of these elements significantly impacts how instructors view their jobs and duties, as well as how confident and capable they are in the classroom.

One important factor influencing professional identity in EFL teaching is educational background. A greater feeling of professional identity is linked to higher qualifications, such as specialist certificates in language instruction or postgraduate degrees in education (Pennington, 2014). With these credentials, educators may equip themselves with the theoretical understanding and practical abilities needed to successfully negotiate the challenges

of teaching languages and establish their authority as professionals in their learning environments.

Another important component in the formation of a professional identity is teaching experience. With increased experience, educators improve their methods, better grasp their responsibilities, and become more self-assured. Because they have had more opportunities to reflect on their work, interact with professional networks, and overcome obstacles in the field, experienced teachers are more likely to have a well-developed professional identity (Beijaard et.al., 2004).

However, it is not always clear how experience and professional identity relate. Day and Gu (2010) point out that changes in institutional objectives, educational policy changes, or personal issues like burnout can cause conflicts in an experienced teacher's professional identity. Teachers at all stages of their careers require continual support and professional development since these variables might result in disillusionment or a loss of professional identity.

Pennington and Richards (2016) also highlight the significance of professional communities in forming a person's professional identity. Teachers can network with colleagues, exchange experiences, and collaborate on professional development by participating in conferences, online forums, and professional associations. These contacts make teachers feel more a part of a larger professional community, which strengthens professional identity.

Farrell's (2011) study examined the connection between an EFL teacher's professional identity and their level of autonomy. The study suggests that educators with a strong professional identity are more likely to be autonomous in their teaching methods, which enhances their dedication and job satisfaction. The study also emphasized the importance of reflective practice in forming a professional identity, implying that educators who consistently self-reflect on their methods will better define and fortify their professional identities.

The research above highlights the significance of providing focused professional development programs, institutional support, and chances for reflective practice to facilitate the formation of professional identities among EFL instructors. Educators and legislators can better assist the professional development of EFL instructors and improve the standard of language instruction by gaining an awareness of the elements that determine professional identity.

There aren't many studies that focus on this important facet of teacher development. Hence, research on the professional identities of EFL instructors in Kazakhstan is still comparatively underdeveloped. The literature in this field is still lacking, even though Kazakh academics have started looking at several elements that affect EFL instructors' professional identities, such as the influence of Kazakhstan's trilingual education policy and the function of professional development programs (Polovnikova & Qanay, 2023; Khegay, 2017). The majority of research that has been done so far has concentrated on more general educational issues, which leaves a big knowledge vacuum about the particular identity development processes and particular difficulties that EFL instructors in Kazakhstan confront. The dearth of thorough research highlights the need for further in-depth, context-specific studies that can provide a complete understanding of how EFL instructors in Kazakhstan create and interpret their professional identities and how this affects their instructional strategies and professional development.

By objectively analyzing the professional identities of in-service EFL instructors and investigating how these identities differ based on credentials and teaching experience, the current study expands on the body of literature already in existence. The results shed fresh light on the variables influencing professional identity and emphasize the need for focused professional development initiatives for EFL instructors' professional development.

Methodology

Research design

This study used a quantitative research design to obtain information on the EFL in-service teachers' professional identity. Quantitative data obtained through a survey method was used to describe the bigger picture by providing the result of a large survey.

Setting and Participants

A random sampling method was adopted to select the participants for the study. One commonly used sampling method in survey studies is simply random sampling. It is considered an appropriate sampling method for selecting a sample among homogeneous and uniform populations. With this selection method, all individuals have an equal chance of participating in the study, as it is entirely randomized (Noor et.al., 2022). The participants of this study were 470 English teachers teaching at 45 different state schools in Turkistan. The sample consisted of teachers of different qualification categories and experience. Detailed information is presented in Tables 1 and 2.

Table 1.

Demographic characteristics of participants related to their qualification categories.

Qualification category	F	%
Trainee teacher and teacher	150	31,9
teacher-moderator	144	30,6
Teacher-expert	107	22,8
teacher-researcher and master-teacher	69	14,7
Total	470	100,0

As depicted in Table 1, the distribution of teachers across qualification categories is as follows: 32% are trainee-teachers and teachers, 30.6% are teacher-moderators, 22.8 % are teacher-experts, 13.6 % are teacher-researchers, and only 1 % are master-teachers. The qualification category signifies the level of professional competence attained by the teachers.

The Ministry of Education outlines the qualification requirements for teachers and classifies them into specific qualification categories based on their qualifications.

Teachers are categorized according to their qualifications as follows:

Trainee teacher and Teacherю The qualification category of "trainee teacher" is conferred by the Ministry of Education of the Republic of Kazakhstan for one academic year, coinciding with the completion of the program designed to acquaint candidates with the teaching profession. During this period, the teacher trainee is paired with a teacher moderator who serves as a mentor, guiding the trainee's development.

Upon concluding the teacher education program, the teacher-trainee must compile a comprehensive report detailing their accomplishment in various instructional activities. this includes demonstrating and analyzing lessons, engaging in lesson study, and employing the action research method. Subsequently, the teacher mentor assesses the trainee's performance and issues a recommendation based on the program outcomes.

The educational institution's certification commission is responsible for conferring the qualification category of "teacher" to the trainee upon completion of the entry into the profession program and a positive recommendation from the teacher-moderator.

1. The " teacher " qualification category is extended to individuals who have completed relevant pedagogical or other professional training, including retraining courses, have at least one year of teaching experience, and are qualified for this position. Prospective teacher candidates must demonstrate proficiency in various domains, including academic discipline,

teaching methodologies, assessment and evaluation techniques, lesson planning and organization, and educational processes. Additionally, they should exhibit an understanding of student psychology and age-related characteristics and contribute to fostering students' general cultural knowledge and socialization. active participation in educational events, implementation of individualized teaching approaches tailored to students' needs, proficiency in professional pedagogical skills, and adeptness in utilizing innovative technologies are also essential requirements.

2. Teacher-moderator

Individuals with relevant pedagogical or other professional training, including retraining courses and boasting at least two years of teaching experience, are qualified for this position. The candidates for this position must fulfill the general requirements for the qualification category "teacher". Additionally, they are expected to demonstrate adeptness in employing innovative teaching methodologies and techniques, conducting lesson research on teaching, including lesson study, using action research methods, engaging in lesson research, including the practice of lesson study, and receiving positive feedback from colleagues on teaching. Moreover, candidates should have prior involvement either as participants, laureates, or winners in professional skills competitions or have served as supervisors to participants or winners of Olympiads, competitions, or contests at the level of an educational organization, district (city of regional importance) following the pre-approved list provided by the authorized body in the field of education.

3. Expert-teacher:

Individuals who have completed relevant pedagogical or other professional training, including retraining courses, and have at least three years of teaching experience are qualified for this position. The requirement for candidates of the 'expert-teacher' qualification category is to fulfill the general requirement for the qualification category teacher-moderator. They must possess the skills of analyzing educational activities and the educational processes. Moreover, the candidate must be able to determine professional development priorities for himself and his colleagues at the educational organization level in an objective and constructive manner, to conduct lesson research on teaching, including lesson study, using the methods of action research, to reflect on lessons and receive positive feedback from colleagues on teaching. Further, the candidate must have experience as a participant laureate or winner of a professional skills competition or as a supervisor of a participant, winner, or prize-winner of Olympiads, competitions, or contests at the level of regional district or city of regional importance according to the list approved by the authorized body in the field of education.

4. Teacher-researcher and Master-teacher:

Candidates must have relevant higher or postgraduate pedagogical education and at least five years of teaching experience. In addition to meeting general qualification requirements, candidates must possess specific professional competencies, including skills for lesson research and development of assessment tools, participation in and achievement in competitions at regional, republic, and international levels, Olympiads, or holding the title of "Best Teacher" generalization of teaching experience at various administrative levels.

In addition to the requirements mentioned above, candidates for the qualification category of "teacher-researcher" must meet the following listed professional competencies:

presents the best educational practices and developments in pedagogy or a program developer whose programs have been implemented in educational organizations and approved by the Republican Educational and Methodological Council at the Y. Altynsarin National Academy of Education or the Republican Educational and Methodological Council under the Department of Technical and Vocational Education, or is an author or co-author of textbooks, educational and methodological aids included in the list of textbooks, educational methodological complexes and aids approved by competent authority in the field of education

or recommended by the Republican educational and methodological council under the department of technical and vocational education.

These requirements aim to ensure that teacher researchers and master teachers have the practical skills and ability to contribute to educational research, mentoring, and professional development within the teaching community.

Table 2.
Demographic characteristics of participants related to their years of experience.

Years of teaching experience	F	%
0-5	115	24,5
6-10	95	20,2
11-15	87	18,5
16-20	97	20,6
21+	76	16,2
Total	470	100,0

Table 2 shows that 24.5 % of participants had 0 to 5 years of teaching experience as English teachers, 20.2% had 6 to 10 years, 18.5 % had 11 to 15 years, 20.6 % had 16 to 20 years, and 16.2 % had more than 30 years of teaching experience as teachers of the English language.

Instruments

Survey

The present study collected data using the English Language Teacher Professional Identity Inventory developed by Hashemi, Karimi, and Mofidi (2021). The inventory consisted of 42 items grouped into 13 dimensions such as:

1) creating a relaxed learning atmosphere; 2) having the tendency to impart knowledge and experience; 3) having respectful behavior; 4) having the ability to develop/select EFL materials; 5) having management skills; 6) having error correction skills; 7) having communication skills; 8) creating an effective teaching environment; 9) having the tendency to develop professionally; 10) familiarity with target language and culture; 11) serving as an effective role model; 12) valuing L1 culture; and 13) being concerned about students' ability and development. The inventory was implemented for the participants as a 4-point Likert type (1- strongly disagree; 2- disagree; 3-agree; 4-strongly agree).

Chronbach's internal consistency coefficient was calculated to determine the reliability coefficient of the questionnaire items. The interpretation of Cronbach's alpha coefficient generally ranges between 0.0 and +1,0. The higher the value of the test results, the higher the internal consistency of the test and, therefore, the reliability of the questionnaire (Abushabab, 2016). The Cronbach alpha coefficient of this scale in the original study was found to be .91. In contrast, in the present study, it was found to be .94, indicating good internal consistency of the items (Pallant, 2020).

Data collection and analysis

The data were gathered through the questionnaire sent to the participants via Google form with the support of the "Education Development Center" of the Education Department of Turkestan Region. The quantitative data was analyzed using the statistical software SPSS version 25.0.

Initially, Skewness and Kurtosis values were computed to determine the normal distribution of the data before conducting inferential statistics. Skewness is commonly used to measure the extent to which the distribution of a variable is symmetrical. In contrast, Kurtosis

assesses whether the data distribution is too peaked. A range between -1 and +1 is considered excellent, and a value between -2 and +2 is considered acceptable. Values close to zero in skewness and kurtosis indicate a normal distribution of responses (Sarstedt et.al., 2021). Accordingly, these values were found to be 0.361 and -1,080 for the qualification category and 0,112 and -1,314 for the years of teaching experience, which indicated that the data is normally distributed. Descriptive statistics (frequency, means, and standard deviations) were used to describe the participants' general level of professional identity. To compare whether the participants' levels of professional identity vary according to their qualification categories and years of teaching experience, a one-way ANOVA test was adopted for data.

Findings

Descriptive statistics were used to answer the study's first research question, "How do in-service EFL teachers assess their level of professional identity?" Table 2 shows the results in terms of means and standard deviations related to each item.

Table 2. Results of Descriptive Analysis

	Questionnaire components	N	Mean	Std. Deviation
1	Creating a relaxed atmosphere	470	2,4894	,59618
2	Having the tendency to imparting knowledge and experience	470	2,6932	,69558
3	Having respectful behavior	470	2,5525	,67896
4	Having the ability to develop /select EFL materials	470	2,5287	,65788
5	Having management skills	470	2,4729	,52869
6	Having error correction skills	470	2,4177	,62121
7	Having communication skills	470	2,5454	,74564
8	Creating an effective teaching environment	470	2,3695	,61903
9	Having the tendency to develop professionally	470	2,4309	,65466
10	Familiarity with the target language and culture	470	2,5734	,80473
11	Serving as an effective role model	470	2,6537	,73983
12	Valuing L1 culture	470	2,1245	,38900
13	Being concerned about students' ability and development	470	2,4596	,65855
14	Total	470	2,5080	,46468

The findings reached through the descriptive analysis (Table 2) indicated the average level of professional identity of participants as (X=2.50). The highest mean values among dimensions were found in "Having the tendency to impart knowledge and experience" (X=2.69) and "Serving as an effective role model" (X=2.65), whereas all the other dimensions' mean values were lower than 2.60. The lowest mean values indicated dimensions "Creating an effective teaching environment" (X=2.36) and "Valuing L1 culture" (X=2.12).

A one-way ANOVA test was used to answer the second research question, "How do in-service EFL teachers' levels of professional identity differ depending on their qualification categories?" The results are presented in Table 3.

Table 3

One-way ANOVA test Results for Qualification Category Differences

		N	Mean	Std. Deviation	F	P	Posthoc LCD
Creating a relaxed atmosphere	Trainee teacher and teacher	150	2,4583	,59741	1,923	,125	
	teacher-moderator	144	2,4219	,54634			
	Teacher-expert	107	2,5864	,63793			
	teacher-researcher and master-teacher	69	2,5471	,61428			
Having the tendency to imparting knowledge and experience	Trainee teacher and teacher	150	2,6640	,70294	2,596	,052	
	teacher-moderator	144	2,5944	,63199			
	Teacher-expert	107	2,8280	,74451			
	teacher-researcher and master-teacher	69	2,7536	,70389			
Having respectful behavior	Trainee teacher and teacher	150	2,4978	,65282	2,264	,080	
	teacher-moderator	144	2,4838	,63298			
	Teacher-expert	107	2,6760	,72750			
	teacher-researcher and master-teacher	69	2,6232	,72965			
Having the ability to develop /select EFL materials	Trainee teacher and teacher	150	2,4767	,61261	2,848	,037	1-3
	teacher-moderator	144	2,4549	,62972			2-3
	Teacher-expert	107	2,6776	,72928			
	teacher-researcher and master-teacher	69	2,5652	,66787			
Having management skills	Trainee teacher and teacher	150	2,3983	,49333	4,355	,005	1-3
	teacher-moderator	144	2,4149	,49751			1-4
	Teacher-expert	107	2,5654	,57905			2-3
	teacher-researcher and master-teacher	69	2,6123	,54661			2-4
Having error correction skills	Trainee teacher and teacher	150	2,3644	,60737	5,225	,001	1-3
	teacher-moderator	144	2,3009	,50069			1-4
	Teacher-expert	107	2,5607	,70873			2-3
	teacher-researcher and master-teacher	69	2,5556	,67559			2-4
Having communication skills	Trainee teacher and teacher	150	2,4400	,72386	5,327	,001	1-3
	teacher-moderator	144	2,4468	,69089			1-4
	Teacher-expert	107	2,7570	,81979			2-3
	teacher-researcher and master-teacher	69	2,6522	,71271			
Creating an effective teaching environment	Trainee teacher and teacher	150	2,3022	,58102	5,933	,001	1-3
	teacher-moderator	144	2,2708	,55606			2-3
	Teacher-expert	107	2,5732	,71638			
	teacher-researcher and master-teacher	69	2,4058	,59648			
Having the tendency to develop professionally	Trainee teacher and teacher	150	2,4167	,65900	1,390	,245	
	teacher-moderator	144	2,3576	,61639			
	Teacher-expert	107	2,5187	,68310			
	teacher-researcher and master-teacher	69	2,4783	,67211			
Familiarity with target language and culture	Trainee teacher and teacher	150	2,5367	,78599	,740	,529	

	teacher-moderator	144	2,5382	,80227			
	Teacher-expert	107	2,6729	,85810			
	teacher-researcher and master-teacher	69	2,5725	,76828			
Serving as an effective role model	Trainee teacher and teacher	150	2,5917	,76106	2,054	,106	
	teacher-moderator	144	2,5851	,70411			
	Teacher-expert	107	2,7640	,74672			
	teacher-researcher and master-teacher	69	2,7609	,73818			
Valuing L1 culture	Trainee teacher and teacher	150	2,0767	,36973	1,147	,330	
	teacher-moderator	144	2,1389	,39421			
	Teacher-expert	107	2,1542	,43116			
	teacher-researcher and master-teacher	69	2,1522	,34624			
Being concerned about students' ability and development	Trainee teacher and teacher	150	2,3978	,61269	4,147	,006	1-3
	teacher-moderator	144	2,3588	,59535			1-4
	Teacher-expert	107	2,5826	,72986			2-3
	teacher-researcher and master-teacher	69	2,6135	,71771			2-4
Total	Trainee teacher and teacher	150	2,4544	,44376	5,426	,001	1-3
	teacher-moderator	144	2,4317	,40176			1-4
	Teacher-expert	107	2,6346	,53147			2-3
	teacher-researcher and master-teacher	69	2,5873	,47723			2-4

*p<0.05

The results of the One-way ANOVA test examining differences in professional identity across various qualification categories of participants yielded a significant F value of 5.426 (p=0.001), indicating statistically significant differences at the predetermined significance level of 0.05.

A closer examination of individual dimensions revealed statistically significant differences among groups. These differences were found in “Having the ability to develop /select EFL materials” (F=2.848; p=.037), “Having management skills” (F=4.355; p=0.005), “Having error correction skills” (F=5.225; p=0.001), “Having communication skills” (F=5.327; p=0.001), “Creating an effective teaching environment” (F=5.933; p=.001), and “Being concerned about students ability and development” (F=4.147; p=.006).

Post-hoc comparisons using the Least Significant Difference (LCD) test revealed statistically significant differences between trainee teachers and teacher groups of participants and teacher experts in terms of their abilities to develop /select EFL materials, skills of managing, correct errors, communicate, create an effective teaching environment, being concerned about students’ ability and development. Teacher experts consistently demonstrated higher scores than trainee teachers and teachers in these dimensions.

Similarly, significant differences were observed between the Trainee teacher and teacher groups of participants compared to teacher-moderators, with the latter possessing higher mean scores in management skills, error correction skills, communication skills, and concern for students' abilities and development.

Following, statistically significant differences were found between teacher-moderators and teacher experts with teacher experts scoring significantly higher in various areas, including abilities to develop /select EFL materials, managing, correcting errors, communicating, creating an effective teaching environment, and concerns for students’ abilities and development.

Finally, statistically significant differences were identified between teacher-moderators and teacher-researchers and master-teachers group of participants, with the latter group demonstrating higher mean scores in skills of managing, correcting errors, and being concerned about students' ability and development

However, no statistically significant differences were detected among the groups in dimensions related to creating a relaxed atmosphere, imparting knowledge and experience, developing professionally, familiarity with the target language and culture, serving as an effective role model, and valuing L1 culture.

To answer the third question of the study, "How do in-service teachers' levels of professional identity vary according to their years of teaching experience?", a one-way ANOVA test was run. The result of the analysis can be found in Table 4.

Table 4.

One-way ANOVA test Results for Years of Teaching Experience Differences.

	Components	Year or experience	N	Mean	Std. Deviation	F	P	Posthoc
1	Creating a relaxed atmosphere	0-5	115	2,4826	,62366	3,850	,004*	1-5
		6-10	95	2,4711	,57063			2-5
		11-15	87	2,3966	,52489			3-5
		16-20	97	2,4175	,53731			4-5
		21 +	76	2,7204	,68309			
2	Having the tendency to imparting knowledge and experience	0-5	115	2,6783	,71950	3,558	,007*	1-5
		6-10	95	2,6084	,63374			2-5
		11-15	87	2,6644	,70644			3-5
		16-20	97	2,6124	,66132			4-5
		21 +	76	2,9579	,71652			
3	Having respectful behavior	0-5	115	2,5275	,69105	3,710	,006*	1-5
		6-10	95	2,5158	,61458			2-5
		11-15	87	2,5134	,64661			3-5
		16-20	97	2,4467	,61593			4-5
		21 +	76	2,8158	,79330			
4	Having the ability to develop /select EFL materials	0-5	115	2,4826	,63843	1,706	,148	1-5
		6-10	95	2,4553	,60139			2-5
		11-15	87	2,5517	,71339			
		16-20	97	2,5052	,62498			
		21 +	76	2,6941	,71484			
5	Having management skills	0-5	115	2,4391	,52835	4,136	,003*	1-5
		6-10	95	2,3500	,43209			2-5
		11-15	87	2,4598	,51415			3-5
		16-20	97	2,4923	,54660			4-5
		21 +	76	2,6678	,58650			
6	Having error correction skills	0-5	115	2,3797	,63658	3,242	,012*	1-5
		6-10	95	2,2807	,49181			2-5
		11-15	87	2,4061	,61511			3-5
		16-20	97	2,4570	,63705			
		21 +	76	2,6096	,68937			
7	Having communication skills	0-5	115	2,4638	,73574	2,654	,033*	1-5
		6-10	95	2,4632	,66364			2-5
		11-15	87	2,5900	,82233			4-5
		16-20	97	2,5017	,71706			
		21 +	76	2,7763	,76862			
8	Creating an effective teaching environment	0-5	115	2,2957	,59361	2,942	,020*	1-5
		6-10	95	2,3228	,54459			2-5
		11-15	87	2,4023	,62078			4-5

		16-20	97	2,3127	,61579			
		21 +	76	2,5746	,70888			
9	Having the tendency to develop professionally	0-5	115	2,3739	,65173			
		6-10	95	2,4474	,65018			
		11-15	87	2,3736	,58676	1,060	,376	
		16-20	97	2,4381	,65055			
		21 +	76	2,5526	,73747			
10	Familiarity with target language and culture	0-5	115	2,5478	,82178			
		6-10	95	2,5895	,76485			
		11-15	87	2,5287	,82953	1,187	,316	
		16-20	97	2,4948	,75517			
		21 +	76	2,7434	,85437			
11	Serving as an effective role model	0-5	115	2,6478	,81104			1-5
		6-10	95	2,5868	,67218			2-5
		11-15	87	2,6379	,71402	4,890	,001*	3-5
		16-20	97	2,4948	,64950			4-5
		21 +	76	2,9671	,77065			
12	Valuing L1 culture	0-5	115	2,1087	,39058			
		6-10	95	2,1263	,39254			
		11-15	87	2,1264	,42603	,143	,966	
		16-20	97	2,1186	,34440			
		21 +	76	2,1513	,40016			
13	Being concerned about students ability and development	0-5	115	2,4464	,65171			1-5
		6-10	95	2,3474	,56685			2-5
		11-15	87	2,4598	,65344	2,694	,030*	3-5
		16-20	97	2,4227	,67788			4-5
		21 +	76	2,6667	,72419			
	Total	0-5	115	2,4762	,48267			1-5
		6-10	95	2,4431	,38761			2-5
		11-15	87	2,4923	,45413	4,999	,001*	3-5
		16-20	97	2,4578	,45066			4-5
		21 +	76	2,7193	,50568			

Statistically significant differences were observed among groups with various years of experience related to almost all scale dimensions and in the total mean scores of the groups (t=4.99; p=0.001). Only in several dimensions, such as “Having the tendency to develop professionally”, “Familiarity with target language and culture,” and “Valuing L1 culture,” did participants of different years of teaching experience demonstrate similar results, and no statistically significance differences were observed in this dimension.

The participants with over 21 years of experience demonstrated significantly higher mean scores than other groups across the dimension. Specifically, they showed notably higher mean scores in dimensions such as Creating a relaxed atmosphere, Having the tendency to impart knowledge and experience, Having respectful behavior, Having the ability to develop /select EFL materials, Having management skills, Having communication skills, Creating an effective teaching environment, Serving as an effective role model and Being concerned about students ability and development. Subsequently, statistically significant differences were found between participants with over 21 years of experience and other groups.

Discussion

The study's conclusions offer insightful information on the professional identities of EFL instructors currently in service. They concentrate on how educators view different facets of professional identity and how these perspectives vary based on their training and prior teaching experience. The study's findings show that participants' professional identities were generally average, with some strengths and shortcomings noted in several facets of professional identity.

By emphasizing the intricate and multidimensional character of identity construction in the context of EFL teaching, these findings add to the body of knowledge already available on teacher professional identity.

According to the first study question's descriptive analysis, participants' average degree of professional identification was moderate (X=2.50). The characteristics "Having the tendency to impart knowledge and experience" (X=2.69) and "Serving as an effective role model" (X=2.65) had the highest mean values. These findings imply that the EFL instructors in this research believe they are skilled and knowledgeable educators dedicated to imparting their knowledge and acting as role models for their pupils. This is consistent with other studies highlighting the value of role modeling and information exchange in helping instructors create strong professional identities (Pennington & Richards, 2016).

However, the study also pinpointed instances where the individuals' professional identities lacked depth. The aspects of "Valuing L1 culture" (X=2.12) and "Creating an effective teaching environment" (X=2.36) had the lowest mean values. These results suggest that EFL instructors could find it difficult to live up to some components of their professional identity, especially when fostering a positive learning environment and incorporating the culture of their first language (L1) into their instruction. The comparatively low ratings in these aspects imply that teacher preparation and professional development programs should focus more on these areas.

A few of the variables that make it difficult to create an effective learning environment in the classroom include the scarcity of resources, the size of the classes, and the pressure to achieve curricular requirements. These difficulties may impede educators' capacity to establish stimulating and encouraging learning environments necessary for efficient instruction and learning (Kelchtermans, 2009). Moreover, the low importance given to "Valuing L1 culture" can reflect how English is frequently used as the target language in EFL instruction, which might cause students' linguistic and cultural origins to be marginalized (Duff & Uchida, 1997). This research emphasizes the necessity of teaching EFL in a more culturally sensitive manner that takes into account the L1 cultures of the students.

The study also employed a one-way ANOVA test to investigate how participants' professional identities varied across their various qualification categories. With a substantial F value of 5.426 (p=0.001), the results showed statistically significant variations in professional identity across these categories. According to this research, a person's professional identity as an EFL instructor is greatly influenced by their qualifications, with more qualifications often linked to a stronger sense of self.

"Having the ability to develop/select EFL materials" (F=2.848; p=.037), "Having management skills" (F=4.355; p=0.005), "Having error correction skills" (F=5.225; p=0.001), "Having communication skills" (F=5.327; p=0.001), "Creating an effective teaching environment" (F=5.933; p=.001), and "Being concerned about students' ability and development" (F=4.147; p=.006) were among the areas where a closer look at individual dimensions revealed statistically significant differences among groups. These results emphasize how crucial certain abilities and competencies are to forming a professional identity, especially in student assistance, communication, and classroom management.

The notable variations noted in the capacity to create or choose EFL materials imply that instructors with greater training may possess more sophisticated abilities in these areas, essential for efficient instruction. This is consistent with Pennington's (2014) assertion that postgraduate degrees give educators the know-how and abilities to successfully negotiate the complexity of teaching foreign languages and demonstrate their authority as professionals. Comparably, the notable variations in communication, error correction, and management skills show that certifications also improve teachers' capacity to give students feedback and support and manage the classroom, which are crucial elements of good teaching (Farrell, 2011).

The results of "Creating an effective teaching environment" are especially significant since they imply that highly qualified teachers are more likely to establish stimulating and encouraging learning settings. This could be a result of their training's increased exposure to pedagogical theories and practices, which gives them the instruments and techniques required to design productive learning environments (Pennington & Richards, 2016). The considerable variations in the dimension of "Being concerned about students' ability and development" further emphasize the importance of credentials in supporting a student-centered teaching method in which educators give special attention to the needs and growth of each student.

Implications for Teacher Education and Professional Development

The results of this study have significant ramifications for professional development and teacher preparation initiatives. Higher credentials appear to lead to a stronger professional identity, especially in classroom management, communication, and student assistance, based on the considerable disparities identified across degree categories. To ensure that teachers are ready for the demands of the classroom, teacher education programs must emphasize the development of these skills and abilities.

Furthermore, the comparatively low ratings in "Valuing L1 culture" and "Creating an effective teaching environment" suggest that teacher education and professional development should give these areas greater focus. Programs should give educators the know-how and abilities needed to establish inclusive, encouraging classrooms that value and include their pupils' language and cultural diversity. This may be accomplished by incorporating students' L1 culture into the curriculum, stressing the value of cultural competency, and using culturally responsive teaching techniques.

In-service teachers should also get continuing assistance and training from professional development programs, emphasizing areas where their professional identities may be less formed. Workshops and seminars on culturally sensitive teaching, materials selection, classroom management, and chances for instructors to participate in peer collaboration and reflective practice are a few examples of what this may entail. Professional development programs can assist teachers in fortifying their professional identities and improving their efficacy in the classroom by offering focused assistance in these areas.

Conclusion

The results of this study illustrate the intricate and multidimensional character of identity construction in the context of language instruction, which advances our knowledge of the professional identities of in-service EFL instructors. The study found several areas where teachers' professional identities were strong and weak, with notable variations seen throughout degree groups. The results above highlight the significance of focused teacher education and professional development initiatives that prioritize cultivating essential skills and abilities in classroom management, communication, and culturally sensitive instruction.

The research also emphasizes the necessity of providing in-service teachers with continuing assistance, focusing on areas where their professional identities may be less formed. Professional development programs can help teachers enhance their effectiveness in the classroom and strengthen their professional identity by equipping them with the skills and strategies necessary to create effective learning environments and incorporate students' cultural backgrounds into their teaching practices.

In summary, this research presents insightful information on the elements influencing EFL instructors' professional identities and has useful ramifications for teacher preparation programs and professional growth. To gain a greater understanding of this crucial component of teacher development, future research should investigate the intricacies of professional identity in various teaching situations and employ both quantitative and qualitative methodologies.

Limitations and Future Research

Although this study offers insightful information on the professional identities of in-service EFL instructors, it must be acknowledged that it has limits. First, the study may have been biased toward social desirability because it relied on self-reported data. Rather of giving answers that accurately represented their views on their professional identities, teachers could have given answers that they thought would be socially acceptable or meet the expectations of the researchers. In order to better understand teachers' professional identities, future research might solve this restriction by employing a mixed-methods approach that combines quantitative surveys with qualitative interviews or observations.

Second, the results may not be as applicable in different educational situations because the study was carried out in a particular one. Future studies should examine these variations to offer a more comprehensive view of professional identity in various circumstances. The institutional and cultural elements that shape professional identity may change among school systems and geographical areas.

Lastly, the study concentrated on the connection among credentials, classroom experience, and professional identity. It did not, however, examine other elements that affect professional identity, such as student-teacher connections, institutional support, and teacher autonomy. In order to offer a more comprehensive understanding of the elements influencing the formation and preservation of professional identities in EFL instructors, future studies may look at these elements.

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship or publication of this article.

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DOI:10.59787/2413-5488-2024-48-4-67-80

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THIRD MISSION OF THE UNIVERSITY: VISION, STRUCTURE, EXPERIENCE

Abstract: The proposed paper is devoted to an examination of the concept of the Third Mission of universities, which is considered to be a pivotal aspect of their social responsibility. The study offers a comprehensive examination of the global experience in the implementation of the Third Mission, encompassing diverse approaches and practices aimed at addressing socially significant issues, fostering innovation and entrepreneurship, and engaging with local communities and stakeholders. The paper presents an overview of the experience of Kazakhstani universities in the implementation of the Third Mission, demonstrating the adaptation of global practices to local conditions and their contribution to regional development. The paper yielded the following outcomes: substantiation of the practical dimensions of the Third Mission of Universities, which may prove beneficial for further research and implementation in the domain of higher education; identification of avenues for adapting successful practices by integrating social responsibility into the activities of universities, including the formation of effective partnerships, the promotion of innovation, and interaction with local communities; identification of pivotal points for further enhancement of the concept of social responsibility in the field of higher education.

Keywords: third mission of the university, university transformation, university strategy, educational innovation, scientific research.

Introduction

The modern university is a dynamic and multifaceted institution that extends beyond the traditional missions of teaching and research. In the contemporary era, universities are assuming a role that extends beyond that of mere repositories of knowledge. They are also becoming active agents of social, economic, and cultural change. Universities engage with local communities, governmental organizations, and businesses in order to address socially significant issues, including those pertaining to environmental sustainability, social inequality, and civil society development. Such institutions serve as hubs of innovation, providing support for nascent businesses, disseminating novel technologies, and cultivating an entrepreneurial spirit among students and faculty. Modern universities cultivate sustainable relationships with external stakeholders, including businesses, government agencies, and non-governmental organizations. Such partnerships facilitate the more effective integration of universities' educational and research efforts with the needs of society. Universities help solve global problems like climate change and digital transformation. They also help create a circular economy, provide inclusive education, and promote sustainable development. They also support culture by supporting the arts, humanities research, and cultural heritage.

This multifaceted image of a higher education institution is due to the realization of the Third Mission, which defines a university as an engine of socio-economic progress in addition to its traditional tasks of education and research. In this mission, universities become centers of innovation, entrepreneurship and social change. The third mission is about making sure that universities help create sustainable models of development that involve local and global communities. To achieve this mission, we need to work with other groups and involve students

and staff in practical projects. The realization of the third mission ensures a significant improvement in the quality of life in the regions, the development of small and medium-sized businesses, and the promotion of social innovation.

The Bologna Process transformed European higher education and led to the third mission of universities. The Bologna Process began in 1999 with the signing of the Bologna Declaration. Its goal was to create a unified European Higher Education Area that could compete globally. This initiative made universities think about their role in society. The Bologna Process promoted the expansion of higher education and improved standards. It also led to universities taking on a wider role. The Bologna Process started to talk about things like students moving around more, making sure that degrees are recognized across countries, making graduates more employable, and making sure that higher education and the job market are connected. These changes created the conditions under which universities began to realize their responsibility to society and to become more actively involved in solving social and economic problems. The need to adapt higher education to the new requirements and challenges of globalization, which was one of the objectives of the Bologna Process, prompted universities to expand their functions to integrate social responsibility into their strategic goals.

The aim of the paper is to conduct a comprehensive analysis of the global experience of implementing the third mission of universities, which is achieved through a literature review. Within this goal, it is intended to study various approaches and practices used by universities to realize their social responsibility. The analysis covers a wide range of initiatives, from integrating innovation and entrepreneurship into the educational process, to active engagement with local communities and participation in addressing global challenges.

In addition, the paper pays attention to the experience of Kazakhstani universities in the realization of the third mission. It considers how global practices have been adapted to local conditions, what specific steps have been taken to strengthen their role in regional development and what results have already been achieved in this process. This focus on both the global and local experience of Kazakhstani universities helps us understand how the third mission can be done in practice and what we can learn to improve this concept in Kazakhstan.

Methods and organization of the study

The materials of the study were scientific papers and program documents describing the principles and strategies of the Third Mission of the university. The authors carried out a systematic literature review on the Scopus database, analyzing Russian and English-language papers for the period 2004 – 2024.

The following research methods were applied to analyze publications using the keywords “third mission at the university”.

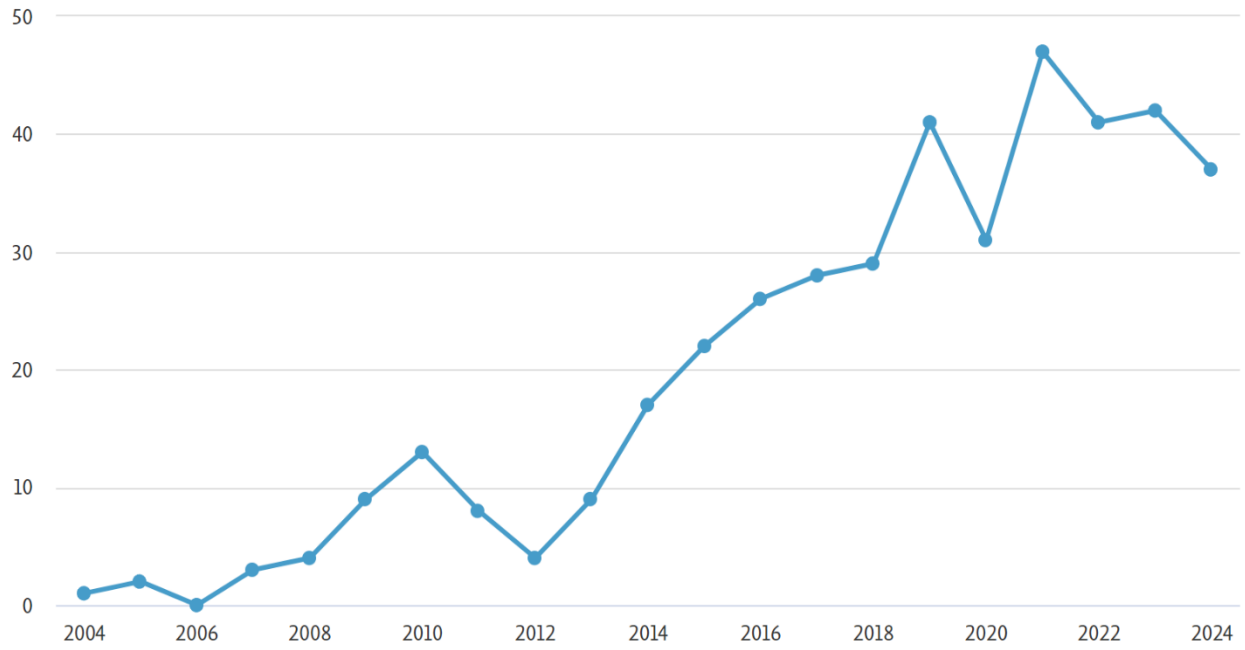
Primary searching and filtering. In the initial stage of the search, all fields of the database were queried to identify the maximum number of relevant publications. This search employed keywords to provide a focus on the research topic. Restricting the languages to English and Russian allowed for a narrowing of the focus to a specific audience and context. The exclusion of related branches of knowledge helped to narrow the focus on the educational field and avoid irrelevant papers. The initial search yielded 33,943 documents.

In-depth search. At the second stage, a filter was applied that limited the search to publication titles, abstracts, and keywords. This approach markedly reduced the number of documents to 414, thereby enabling us to concentrate on the most pertinent and information-rich sources. This comprehensive search strategy facilitates the establishment of more precise links to the subject matter under investigation and provides access to the primary abstracts of the publications, which is beneficial for subsequent analysis.

Qualitative and quantitative analysis. Following the preparation of the database comprising 414 documents, a quantitative analysis was conducted. This included the

description of publications according to various criteria, such as year of publication, country of origin, organization, and other established categories. This enables the monitoring of publication trends and the identification of the most active regions and organizations within the study area (see Figures 1, 2).

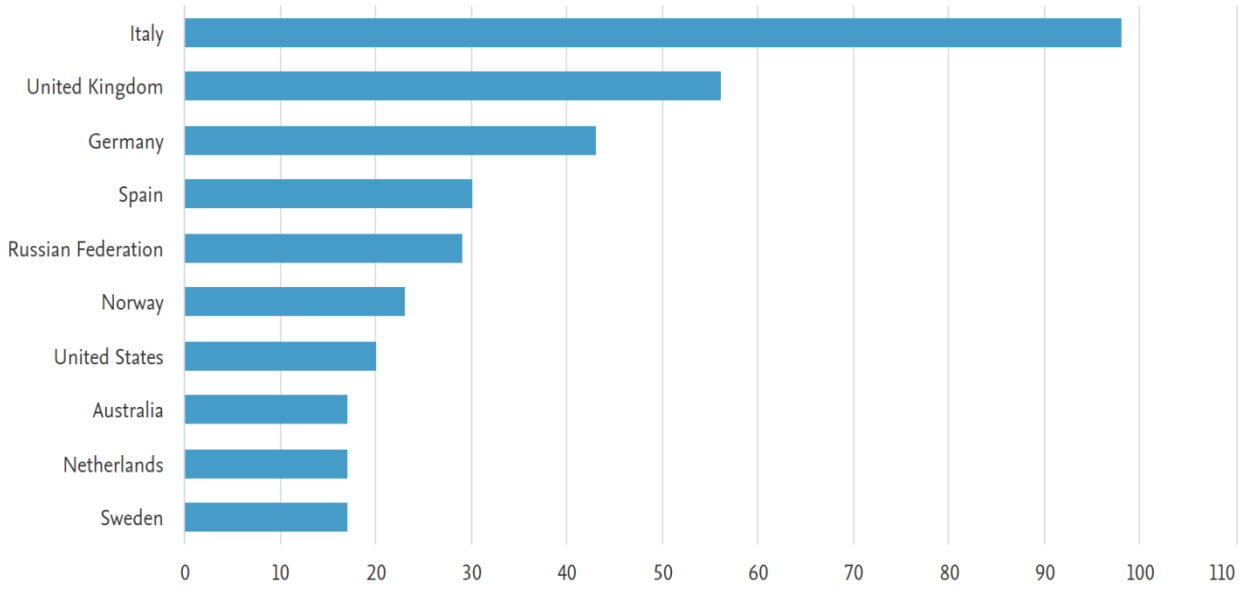
Figure 1
Publications by year



The data demonstrate a notable surge in the number of scholarly publications dedicated to the University's Third Mission, with notable peaks observed in 2010, 2014, 2019, and 2021. Let us point out some key reasons for the growth of publications in these years. The global economic crisis of 2008-2009 has exacerbated the need to rethink the role of universities in society. The need to create new economic models and find ways out of the crisis has increased. Universities have come to be seen as important players in supporting local economies, innovation and job creation. Also in 2010, interest in sustainable development intensified, leading to an increase in research on how universities can contribute to solving environmental and social problems. By 2014, many countries, especially in Europe, began to actively promote innovation programs and policies. This time is characterized by the establishment of innovation support programs, which led to an increased role of universities as centers of innovation and research. The result has been an increase in publications exploring the role of universities in these processes. In 2019, there was an increased focus on social inequalities and political polarization, reflected in a growing number of studies on the role of universities in promoting social justice and democratic processes. The COVID-19 pandemic radically changed many aspects of life, including the role of universities. In the face of the global crisis, universities have been on the front lines of the pandemic, conducting research and providing expertise. This has led to a significant increase in the number of publications on how universities can contribute to societal and economic recovery from the pandemic. The pandemic precipitated the acceleration of processes of digitalization and transition to distance education, which in turn necessitated a rethinking of approaches to learning and social interaction. This has also

contributed to a growing interest in the third mission, particularly in the context of lifelong learning and social interaction.

Figure 2
Publications by country

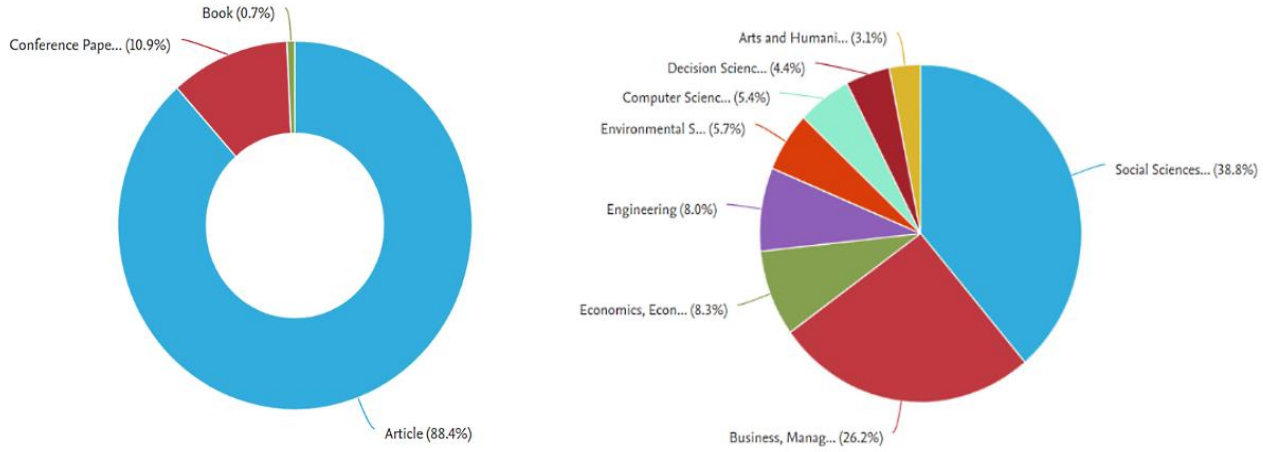


Italy, Great Britain, Germany, Spain are leaders in the number of publications on the third mission of universities for several reasons related to the peculiarities of their educational system, public policy, and social and economic conditions. European countries stand out on the world stage for their integrated approach to the development of higher education, which includes a significant focus on the third mission of universities. The Bologna Process launched in 1999 contributed to the unification of higher education systems in Europe, which created favorable conditions for the integration of the third mission of universities in their activities. As a result, universities in Europe have become more active in social responsibility, innovation and community engagement. The European Union actively supports programs aimed at the development of social responsibility of universities and their interaction with society. Programs such as Erasmus, Horizon are aimed at funding research and innovation that have a direct social and economic impact. European culture is characterized by a profound commitment to social responsibility, a value that is reflected in the educational system. European universities are traditionally regarded not only as centres of education and research, but also as active participants in public life. This encourages the pursuit of research in the field of what is known as the “Third mission”.

Comparative analysis. A comparative approach entails a comparison of the number of publications according to different criteria, such as the types of fields of knowledge or funding organizations involved. This method facilitates the identification of the fields or organizations that contribute the most to the advancement of Third Mission theory and practice in universities.

Data visualization. The charts built by the database make it easier to understand the information and visualize the results of the analysis (see Figures 3, 4).

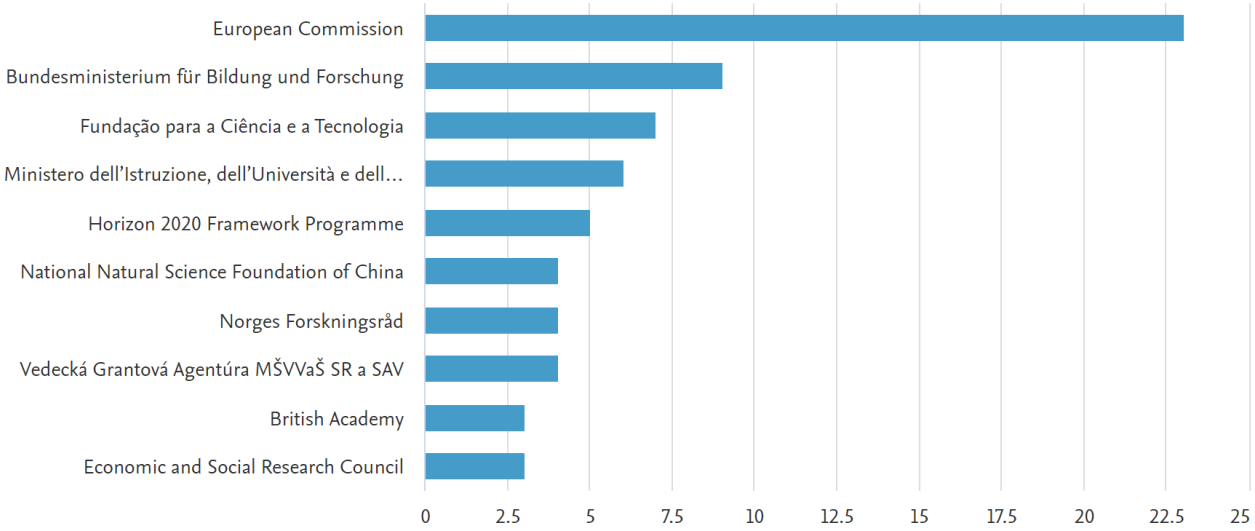
Figure 3
Publications by type and branch of knowledge



The distribution of publications by type with the overwhelming predominance of papers (88.4%) indicates that the topic of the Third Mission of Universities is actively researched in the scientific environment. The prevalence of papers indicates the high relevance of the topic. Researchers prefer to publish the results of their research in journals, which allows for the rapid exchange of new data and ideas. Papers tend to get into circulation faster than books and are more likely to be used to analyze current and rapidly changing trends. The share of publications resulting from conferences (10.9%) shows that researchers also actively discuss the Third Mission at scientific events. Conferences serve as an important platform for exchanging ideas, debates and receiving feedback from colleagues, which contributes to the development of the topic and the expansion of the network of scientific contacts. The small percentage of books devoted to the topic suggests that research in this area has not yet reached a level of maturity where the accumulated knowledge is systematized in the form of monographs or textbooks.

In the last twenty years, the growth of publications on the third mission of universities in social sciences, business, management, economics and engineering has been driven by global economic and social changes. Globalization processes have led to an increased role of universities in regional development and innovation, which has become a necessity to maintain competitiveness and sustainable growth in a global economy. At the same time, the emphasis on corporate social responsibility and sustainable development has stimulated research on the third mission, as universities have become important actors in addressing social and environmental issues. The development of technology and the need for its effective implementation in society have also increased interest in the role of universities in knowledge transfer and innovation, which is reflected in the growing number of publications on this topic.

Figure 4
Publications by research funding organizations



The European Commission actively supports research and initiatives aimed at strengthening the third mission of universities through its funding programmes such as Horizon 2020 and Horizon Europe. These programmes provide significant funding for projects that promote innovation, sustainability and social responsibility. This approach reflects the EU strategy to strengthen the role of universities in addressing global and regional challenges, which is directly related to the concept of the third mission.

Interpretation and conclusions. The research team conducted an analysis of the data obtained, identifying key trends and patterns.

The described research methods contribute to a deeper understanding of the topic and allow us to build an overall picture of the research, as well as help to identify key players, trends and possible directions for future research and practice.

Content analysis is a method of literature review that allows for a systematic examination of text materials, thereby facilitating the identification of key themes, trends, and patterns. This approach contributes to a comprehensive understanding of the topic under study. A detailed presentation of this analysis will be provided in the subsequent section of this paper.

Literature review

A systematic review of the literature was undertaken to identify the principal models and strategies for the implementation of the Third Mission in universities. This enabled the determination of the predominant approaches and practices employed in their implementation.

The approaches highlighted reflect such key aspects as academic activity, innovation processes and social responsibility within the framework of the Third Mission of Universities.

Academic activity as a driver of the Third Mission is considered in the context of practice-oriented learning and in the context of lifelong learning (LLL).

Practice-oriented learning is a strategy aimed at integrating theoretical knowledge and practical skills needed to solve real problems of society and the economy. This approach involves developing curricula that focus on the practical aspects of students' professional activities. The focus is on project work, collaboration with industrial partners and participation in real projects, which allows students to apply the acquired knowledge in real conditions and develop key competencies that are in demand in the labour market. In this way, universities not only form academic knowledge, but also contribute to the preparation of graduates who are

able to effectively act in a professional environment, which directly corresponds to the goals of the Third Mission (Compagnucci & Spigarelli, 2020; La Sala et al., 2020).

A notable example of practice-oriented learning is the experience of Aalborg University in Denmark, which has developed a distinctive model of an educational process that engages students in projects that contribute to sustainable development. In this approach, students engage in the actual execution of tangible projects, frequently in conjunction with external stakeholders from industry and public institutions. These projects focus on solving current problems related to sustainable development, allowing students to gain practical experience and develop innovative solutions. The university actively integrates sustainability topics into its curricula, allowing students to not only study theoretical aspects but also apply them in practice. The programmes include courses in sustainable design, resource management and the development of technologies that help reduce environmental impacts. Aalborg University is involved in numerous international and regional initiatives aimed at sustainable development. It is a member of a network of universities and research institutions working on global challenges related to the environment, energy and social aspects of sustainable development (Lehmann et al., 2009).

Lifelong learning, within the Third Mission of universities, emphasizes the continuous educational process that supports professional and personal development throughout life. This aspect includes the offering of educational programs and courses aimed at expanding and updating knowledge, skills and competencies, which is especially important in the context of rapid changes in technology and professional requirements. Universities develop and offer a variety of courses, programs, and training opportunities for individuals across different age groups and professional backgrounds. This facilitates adaptation to changes in the professional environment and personal growth. Lifelong learning thus serves to maintain the connection between universities and society, ensuring the continuous development and updating of knowledge in accordance with market requirements and social changes (Yang et al., 2015; Secundo et al., 2017). An interesting example of the implementation of lifelong learning programs is the work of some universities in their botanical gardens: for city residents, botanical gardens, in addition to their main functions, are gradually becoming a place for the integration of different groups of the population – from schoolchildren to pensioners. In these public spaces, an active educational policy is carried out, aimed at many segments of the wider university community, taking into account the experience of regional environmental organizations and international associations of botanical gardens (Chernysheva, 2021).

Research, methods and innovation

The objective of research and innovation for the third mission of universities is the creation and implementation of practical solutions to address urgent social, economic, and environmental challenges, thereby contributing to sustainable development and social advancement. A substantial corpus of scientific literature exists on this specific iteration of the Third Mission at the university. Thus, the works of Spânu P., Ulmeanu M., Doicin C.-V.; Li J., Gong Y., Li H.; Demarinis Loiotile A., De Nicolò F., Agrimi A., Bellantuono L. et al. describe the experience of universities in implementing a comprehensive approach to activating innovative creativity through research cooperation with industry, patenting, consulting activities, licensing of new technologies, creation of start-ups and subsidiaries, entrepreneurship programs, incubation and much more (Spânu et al., 2024; Li J. et al., 2024; Demarinis et al., 2022).

UK universities in Newcastle, Aberdeen, Belfast and Stirling have been involved in the City Deals programme, which aims to improve the quality of urban life by developing technology solutions to meet the diverse needs of society and local market demands (McCann et al., 2023). The University of Bergen in Norway has developed a common research ecosystem

through various political and social connections at the local, national, and global levels. It has done so by taking an active part in political and economic forums and committees as experts and consultants, and through membership on the boards of companies, public organizations, and associations (Taxt et al., 2022).

Universities in Portugal and Spain, like many others, receive partial financing from their own income generated from teaching and research activities. This necessitates the optimization of resources and a concentration on areas that can provide the greatest economic return. Consequently, universities endeavor to cultivate novel initiatives and collaborations that can foster economic value and, potentially, generate revenue (Monteiro et al., 2021).

The Pontifical University of Comillas is a Jesuit university located in Madrid and is developing initiatives and projects such as: developing an application for virtual stores, printing chemotherapy boxes for children, printing parts for children with severe disabilities, recycling plastics into yarn for 3D printers, programming sensors for monitoring and controlling the health of plants, automatic watering in smart gardens, etc. (Puente et al., 2021).

Social sphere. Another option for developing the Third Mission at the University includes active participation in social innovation and improving the quality of life in the community through the involvement of students and staff in projects aimed at solving social problems and developing social responsibility.

The most common format of social participation of the university is the volunteer movement, in which students and employees solve such issues as assistance in the dissemination and acquisition of education, support in the field of health care, work with socially vulnerable groups, support for employment and integration of people, as well as participation in socially significant projects and initiatives (Conn et al., 2014).

Universities collaborate with local and international volunteer organizations to organize joint initiatives and projects, thereby enabling students and staff to actively engage in social change at the local and global levels. Furthermore, events are held with the objective of raising awareness about volunteering. These include volunteer days, social initiative fairs, and conferences where successful volunteer projects and their impact on society are discussed. For example, The University of Manchester is very supportive of volunteering. The Volunteer Hub has been created, which contains a database of organisations with which the university carries out volunteering cooperation at the local, national and international level. This hub is also a service that tracks the hours of volunteer work of students within the framework of the Stellify award and/or the Manchester Leadership Programme (https://www.volunteers.manchester.ac.uk/).

Furthermore, volunteer work can be regarded as a means of professional development and a potential gateway to specific employment opportunities. Participation in such activities enables individuals to cultivate skills and abilities, which can be conceptualised as “personal and social resource capital” that may prove beneficial in securing future employment. (Giancaspro & Manuti, 2021).

Volunteering is often responsible for developing the environmental movement: environmental protection projects (cleaning water bodies, planting trees and participating in pollution reduction campaigns); educational events and workshops on ecology and sustainable development for the local community; research projects aimed at studying ecosystems and developing solutions to improve the environmental situation; promoting environmentally friendly habits such as recycling, reducing plastic consumption and saving energy through campaigns and initiatives on campus and in the community (Dlimbetova et al., 2019).

Thus, the main vectors for implementing the Third Mission at the University include educational initiatives aimed at preparing students to solve social and environmental problems, research activities aimed at developing innovative solutions for sustainable development, and

social participation, including active involvement in projects that improve the quality of life in the community.

Results

Literature analysis demonstrates how universities around the world are integrating the Third Mission through educational, research and social initiatives. Based on these global trends, it is possible to trace how Kazakhstani universities adapt and implement the principles of the Third Mission to meet local needs and challenges.

In the Third Mission, universities not only transmit their knowledge, but also actively integrate their resources into public needs, directing them towards social, cultural and economic development. This is a strategically important approach that is becoming increasingly relevant in the context of globalization and rapid changes in society. Universities in Kazakhstan, following international trends and initiatives, strive to embody this approach in their practice.

One of the key initiatives is the introduction of the international CDIO (Conceive-Design-Implement-Operate) model into the educational system. This model is aimed at training graduates who possess not only theoretical knowledge but also practical skills necessary for successful work in complex engineering and technical fields. CDIO implementation in Kazakh universities allows students not only to learn how to design and implement complex engineering systems, but also to manage them at all stages of their life cycle.

Lifelong Learning (LLL) also plays a significant role in the realization of the Third Mission. The Silver University in Kazakhstan program provides opportunities for professional and personal growth of older people by promoting continuous learning and social engagement. This program includes courses on digital literacy, financial security, foreign languages, as well as art therapy and physical health. The Silver University project organizes master classes and seminars on topical topics that help adults adapt to a rapidly changing world and remain active members of society.

In the field of research, Kazakhstani universities are actively developing cooperation with scientific and industrial partners such as “Ulba Metallurgical Plant” JSC, “KEMONT” JSC, “KAZ Minerals” LLP, “Kazzinc” LLP, etc., which contributes to the creation of innovative ecosystems. These partnerships enable universities to develop high-tech solutions and conduct research in natural resource management, geology, new materials and technologies. For example, joint projects in mineral extraction and processing lead to the creation of new, more efficient working methods and ensure competitiveness both nationally and internationally.

In the social sphere, Kazakh universities are engaged in the advancement of volunteer programs, environmental initiatives, and cultural projects, which contribute to the enhancement of regional quality of life and the cultivation of social responsibility. A significant area of focus is volunteering, wherein students and faculty members engage in initiatives aimed at assisting vulnerable populations and addressing social issues. For example, universities organize a variety of landscaping initiatives, provide assistance in nursing homes, and collaborate with children from disadvantaged families.

Environmental initiatives such as the Green Campus project encompass activities designed to diminish the institution's carbon footprint and enhance its environmental sustainability. As part of this project, students and staff are engaged in the development and implementation of energy conservation policies, including the utilisation of renewable energy sources and a system of separate waste collection. Such initiatives facilitate not only a reduction in the university's impact on the environment, but also the development of a responsible attitude towards ecology among students.

Moreover, universities facilitate the implementation of cultural initiatives with the objective of fostering regional cultural and civic consciousness. Such initiatives encompass a

range of cultural activities, including events, exhibitions, and festivals, which facilitate cultural exchange and local community development.

Kazakhstani universities are actively implementing the Third Mission, which entails the integration of academic education, research activities, and social participation. This enables not only the reinforcement of the bonds between academic institutions and the surrounding community, but also the advancement of the region's sustainable development, addressing pressing social and environmental concerns.

The Third Mission of universities, which encompasses social, educational, and scientific aspects, is a complex and multifaceted concept. Its objective is to integrate academic activities with the needs of society. In the context of our study, we examined the implementation of this mission in universities through the lenses of education, science, and social activity.

Discussion

This research aimed to identify pathways for the implementation of the Third Mission within universities. A significant portion of the results obtained aligns with previous studies in this area. In the discussion, we highlight key findings and emphasize important aspects.

For many papers, the Third Mission of universities primarily involves the development of innovation, creativity, and entrepreneurship (Dinh, 2021; Petersen et al., 2022). These works underscore the importance of resources and research and development opportunities associated with technology transfer within universities (Chedid & Teixeira, 2019; Vefago et al., 2020).

In our paper, research activity is presented as a critical component of the Third Mission, with innovation being feasible only when the educational system and social initiatives collaborate to create the necessary technologies. The paper also highlights successful examples of collaboration between Kazakh universities and industrial partners, such as Ulba Metallurgical Plant and KAZ Minerals, in developing innovative ecosystems. While similar partnerships are discussed in international literature, focusing on specific enterprises and their roles in fostering local high-tech solutions strengthens the connection between academia and industry in Kazakhstan. This adds a regional context to discussions about global trends in the integration of science and industry.

A considerable body of research links the implementation of the Third Mission to the transformation of educational systems toward practical orientations and the reformation of teaching practices (Buch et al., 2022; González-Pérez & Ramírez-Montoya, 2022; Bosanac et al., 2023). Our study presents a concrete example of implementing the CDIO initiative, outlining a pathway for universities to incorporate it into their academic activities. This pathway is particularly relevant for Kazakh education, especially in engineering, as Kazakhstan transitions to Industry 4.0 and requires advanced engineering personnel.

Another crucial aspect of the Third Mission is societal transformation and the active role universities play in this process (Schildermans, 2022; Jones et al., 2021). The proposed paper presents specific mechanisms for implementing social initiatives that can also be adopted by other universities in Kazakhstan: the Silver University programs, promotion of green campus ideas, and urban initiatives. The Silver University program emphasizes the social significance of educating older adults and their engagement in community life. In international research, lifelong learning typically focuses on adult education within retraining and adaptation to the labor market. Our emphasis on the social component, including digital literacy courses, art therapy, and wellness programs for seniors, offers a unique local interpretation within the context of Kazakhstan.

The future development of the Third Mission in universities will likely focus on increasing the institutional capacity for integrating emerging technologies such as artificial intelligence, digital twins, and big data analytics to enhance both education and societal impact. This could enable universities to develop predictive models for social and environmental

issues, thus facilitating proactive solutions. There is also the potential for expanding public-private partnerships, leveraging not only traditional industries but also start-ups and tech firms to create innovative ecosystems that address local and global challenges. Furthermore, the internationalization of education through virtual exchange programs may allow universities to extend their Third Mission reach beyond geographical borders, offering new solutions to global issues while fostering cross-cultural collaboration. Additionally, the growing emphasis on ethical leadership and social innovation in curricula may redefine the role of universities, positioning them as key players in creating equitable and sustainable futures through policy influence and community engagement.

Findings

The conducted research on the Third Mission of universities led to several key conclusions.

The notable growth in publications related to the Third Mission of universities aligns with a broader global emphasis on sustainability, innovation, and social justice. This trend is particularly pronounced in European countries, where strong government support and funding initiatives, like Erasmus and Horizon, play a crucial role in fostering research that is not only abundant but also relevant in tackling pressing societal challenges. This indicates that government policies and funding mechanisms are essential for driving research and promoting university engagement with social needs.

Second, universities are focusing on practice-oriented learning as a means of preparing students to solve social and environmental problems, thereby developing their competencies in real-life situations. This approach reinforces the alignment between academic education and societal needs.

Third, university research is increasingly directed toward developing innovative solutions for sustainable development, allowing for the translation of scientific results into practical applications that tackle current challenges. Collaboration with industrial partners plays a crucial role in this process, ensuring that research findings are integrated into real-world industrial contexts and facilitating the introduction of new technologies and methodologies.

Fourth, universities are actively engaged in social projects aimed at enhancing community quality of life. These initiatives encompass volunteer programs and environmental projects that support vulnerable groups and promote regional environmental sustainability. Through these efforts, universities demonstrate their commitment to social responsibility and their active participation in addressing social and environmental challenges.

The findings and insights from the paper hold considerable relevance for Kazakhstan, particularly in the context of its socio-economic development goals.

As Kazakhstan seeks to improve its educational landscape, embracing the Third Mission can facilitate the transformation of universities into centers of innovation and social responsibility. This alignment with global trends can attract more students and investment, enhancing the nation's educational standing on an international level.

Effective implementation of the Third Mission can directly address social challenges within Kazakhstan, such as poverty, unemployment, and regional disparities. By engaging in community-oriented projects, universities can contribute to solving these issues while simultaneously developing relevant skills among students.

Fostering entrepreneurship through university initiatives can stimulate economic growth, particularly in emerging sectors. This aspect is critical for Kazakhstan's diversification efforts away from oil dependency toward a more varied economy.

The emphasis on building partnerships with local businesses, NGOs, and government agencies will be vital for the successful engagement of universities in regional development.

This cooperative framework can lead to more impactful research activities and innovations that meet the needs of the local economy and society.

The article provides a strategic foundation for Kazakhstani universities to enhance their role in society through the Third Mission, ultimately promoting sustainable development within the nation. By integrating social responsibility into their core activities, these institutions can become pivotal agents of change in their communities.

Financing

This research was performed within the framework of grant funding for scientific and (or) scientific and technical projects for 2023-2025 of the Ministry of Science and Higher Education of the Republic of Kazakhstan BR21882257 “Creating a national model of engineering education to incorporate sustainable development goals”.

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

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DOI:10.59787/2413-5488-2024-48-4-81-95

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MODELING THE UNIVERSITY'S INTERNAL QUALITY ASSURANCE SYSTEM: THE CASE OF KAZAKHSTAN

Abstract: Research offers a conceptual model to provide the university's internal quality assurance system at national level. The purpose of paper is to develop a new model of the university's internal quality assurance system based on the values of a culture of quality among the entire higher education community: academic staff, students, managerial staff, employers, government agencies and others.

Research methodology includes a modelling approach with analytical review of legal and regulatory acts and presentation of the structural architecture of the higher education quality assurance system. This part includes the content and evaluation unit of the internal quality assurance system and organizational and analytical block of the internal quality assurance system model, and organizational and analytical block of the internal quality assurance system model. Quality assurance includes measures to manage high-quality content, high-quality contingent, high-quality personnel, and high-quality infrastructure.

The proposed model suggests that HEIs can enhance the internal quality assurance system and maintain quality culture.

Keywords: Quality assurance system, internal quality assurance, modeling of system components, regulation of internal processes, higher education

Introduction

The problem of the higher education system has become the subject of research by scientists from different countries. Ensuring the quality of education is one of the global Sustainable Development Goals of the United Nations, which corresponds to the initiative "Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all" and its key performance indicators.

To create a quality assurance system for education, Kazakhstani universities act in accordance with the Standards and Guidelines for ensuring the quality of higher education in the European Higher Education Area. In Kazakhstan, ESG is considered more as a practical tool.

According to the world ranking on the Global Competitiveness Index (2020), Kazakhstan ranks 55th, and on the Human Development Index (2020) – 51st.

At the same time, according to Global Knowledge Index 2021, Kazakhstan occupies a low place in terms of its knowledge infrastructure. Kazakhstan ranks 78th out of 154 countries and 72nd out of 154 in the higher education sector. In 2022, the indicators in this Index deteriorated: 78th place in general and 79th place in higher education among 132 countries.

In general, the indicators correlate with each other and reveal contradictions between the necessary and achieved level of quality of education, in particular higher education and the competitiveness of the system.

In our opinion, several factors underlie the unsatisfactory quality of higher education in Kazakhstan. Here are the main ones (Mukhatayev et al., 2023):

1) lack of autonomy – until 2018, the system of higher and postgraduate education was under strict regulation of public administration, losing flexibility in terms of global competitiveness;

2) insufficient financing, in conditions of low solvency of the population, the cost of state grants remained unchanged for quite a long time. This has led to a low level of remuneration for teachers and the obsolescence of the material and technical base of universities;

3) corruption in licensing, quality control both at the level of the system as a whole and at the institutional level of higher education, which led to the opening and existence of a large number of educational institutions.

These and other problems certainly reduce the competitiveness and effectiveness of higher education. These include the low efficiency of the education quality assurance system.

To solve these problems, it is necessary to take comprehensive measures, considering global trends and best practices, as well as strengthen interaction between the state, universities, employers and the public.

With the adoption of the Law "On Amendments and Additions to some Legislative acts of the Republic of Kazakhstan on the expansion of academic and managerial independence of higher education institutions" (2018), HEIs received a certain degree of freedom of action, thereby laying the foundation for solving the first problem – the lack of autonomy.

Since 2020, the cost of grants for bachelor's degree programs has been increased from 30 to 300%, which made it possible to gradually increase the salaries of teaching staff and upgrade the infrastructure of universities. Nevertheless, the shortage of highly qualified personnel in the field of higher education persists.

Solving these and other problems, of course, should yield results in the medium and long term. The state is taking measures to improve the quality and prestige of higher education, in 2022, through the reorganization of the Ministry of Education and Science, the Ministry of Science and Higher Education was established, due to the specifics of the management of HE system and science.

The Concept of the development of higher education and science on 2023-2029 years (2023) sets ambitious goals for the system, for example, "15 Kazakhstani universities should enter the top 700 in the QS-WUR rating by 2029." One of the key tasks is to increase the share of foreign students to 10% by 2029 (according to demographic data, this will be more than 100 thousand foreign students) versus 7% in 2023 (in absolute terms, about 40 thousand foreign students).

The higher education system faces the following questions: how to accomplish the tasks set? how to achieve the indicators? With an abundance of funding, it would be possible to open new or shake up existing several universities according to the "accelerated universities" scenario, according to the type of Nazarbayev University. Unfortunately, in conditions of global uncertainty and political instability, the country does not have such a "luxury". What should I do in such a situation?

It seems to us that there is one way out – setting up QA system in such a way that it becomes synergetic and harmonious; a clear definition of the responsibility and function of each participant in the process – students, universities, accreditation bodies, employers, and the state. Particular attention should be paid to the internal quality assurance system as the primary cell of the national quality assurance model, the regulation of processes and procedures in accordance with quality assurance standards.

These and other factors suggest conducting research on improving the national higher education system to increase the competitiveness of Kazakhstani universities in the global market, including setting up IQAS for universities.

Methods of research

The study was carried out in two stages: at the first stage, an analysis of scientific literature, regulatory documents, documents of the Bologna process, domestic and international experience in the internal quality assurance system using theoretical methods was carried out. Theoretical methods included a review of scientific literature, a review of documents regulating higher education; analysis of secondary data (websites, university documents).

The obtained results were used to form conclusions about the state of IQAS of higher education in Kazakhstan and to search for possible ways to solve problematic issues, which was the second stage of the study. Using modeling methods, a model of the university's internal quality assurance system and its structural components were constructed and fragmented regulation of the university's internal processes was carried out.

Literature review

ESG (2015) serve as the framework for the internal quality assurance system in higher education institutions (IQAS HE). In that case at national level the Order of the Minister of education and science approves the Standard rules of activity of organizations of higher and postgraduate education (2018) that constitute the obligation of HEI to improve the quality of educational activities.

The autonomy of HEIs allowed to create their internal quality assurance system that includes a set of components as quality assurance goals, conceptual approaches, methods, principles, functions, and technology of provision as a purposeful interaction of participants in the educational process, focused on achieving the desired result (Yesenbayeva G.A. and Kakenov K.S., 2014). But such model does not directly show the influence of international factors and conditions on higher education institutions such as the globalization of the economy, the democratization of society, the mass character of higher education, the development of science and technology, etc.

In accordance with HEIs' statutory goals and development potential, the university should provide that all processes are structured to ensure prompt identification of problems, their adequate research and formulation of possible solutions, paying attention to the substantive aspects of quality assurance and minimizing formal requirements for curricula, PhD programs and departments (ANVUR, 2023).

Having established the internal quality assurance system HEIs are in search of tools for self-assessment and of choosing of appropriate mechanisms and activities in the educational process (Sharova et al., 2023; Gaftandzhieva et al., 2020). The most adequate instrument for many researchers is to conduct surveys among different types of stakeholders to evaluate the level of quality assurance formation (Graham et al., 2023; Er et al., 2020). Such surveys have got an aim of continual quality improvement in student learning with accountability as an important consequence (Boyle, P., and Bowden, J. A., 1997).

Therefore IQAS, as a primary issue, is partnership that include those that promote cooperation among faculty and staff groups such as unions, departments, and work units. This collaboration directed to efficient training of students considering the changing competence requirements of the labor market (Orr et al., 2020).

In our study we analyzed the Kazakhstan model quality assurance in higher education developed by researchers of Astana IT University where an indicator of IQAS HE is the academic reputation of HEI. In their model "academic reputation" reflects the "perceived quality" of the university's educational service by the consumer (Omirbayev et al., 2021). Academic reputation plays a significant role in strengthening its social responsibility where quality assurance in HEI serves as one of the core academic values (Eaton, J.S., 2021).

The quality as value must be supported by the whole institutional community through different dimensions (learning and teaching effectiveness, efficiency and resource adequacy,

etc.) (Vettori et al., 2016). Although it should be maintaining the relationship between internal quality assurance and quality culture in the international higher education context (Hien, Ta and Huong, Nguyen, 2021).

The permanent evaluation of quality assurance system requires effective and efficient data management and strategic decision-making that assist in identifying potential shortcomings and areas for improvement (Ganseuer, Ch. and Pistor, P., 2017).

Analysis of the different IQAS illustrates approaches and options that can be considered as good principles and a source of inspiration to guide other HEIs in the design and development of their own IQA systems although IQAS that is embedded in a particular quality culture and can't be transferable or impossible to copy and paste onto another institution.

Each university has a purpose to foster continuous improvement of the service provided whereas the internal quality systems are aimed at enabling the institutions to manage and control their quality related core activities (Núria et al., 2008).

The impact of effective IQAS can be provided by commitment of all stakeholders towards continuously enhancing educational quality, including leadership that fosters a quality culture (Renée E. et al., 2023). As for students the higher education institutions must provide training for them with internal quality assurance roles (Renée S. et al., 2016).

IQAS unambiguously covers all processes in HEI that should maintain and continuously improve the quality and standards of its educational provision (Mensah & Mary, 2022) with the support of higher management or HEI leadership (Markus and Philipp, 2018).

But the research focuses on establishment of the IQAS that in the Central Asia university that also will not neglect the diversity despite global standardization (Paradeise et al., 2013). There is a corollary that discloses the model of IQAS developed in HEI that will be a framework to support a culture of continuous improvement (Kayyali and Mustafa, 2023).

The literature review revealed that HEIs develop their own system of internal quality assurance individually, but they support the main principles of quality culture among all stakeholders. The difference between the abovementioned IQAS incorporates the presented mechanisms of its support and maintenance. In our study we present the Model of a university quality assurance system that was implemented at Astana IT University and will be adopted at national level.

Results and discussion

Literature review and an analysis of the activities of universities from the top 100 leading international rankings (QS, THE, ARWU) showed that the goal of the university quality assurance system is to increase the competitiveness of its graduates, as well as the pursuit of academic excellence and corresponds to the mission of the university.

The QA system of the University of Cambridge (Cook, N.D.) is documented and describes the role and place of the following: Key institutional bodies, Education services, Key central committees, Key quality processes, External regulators, Student engagement. Special attention should be paid to Key quality processes, which are important components in quality assurance; an Overview of process responsibilities (University of Oxford, n.d.) is separately attached to the system, in which the roles of departments and services are distributed.

At MIT, quality assurance is implemented in accordance with the International Standards of Professional Internal Audit Practice (The Institute of Internal Auditors, 2017) published by the Institute of Internal Auditors (IIA). These standards require objectivity and independence in conducting audits. To ensure independence, the university has a dual reporting structure: on the one hand, the MIT Risk and Audit Committee, and on the other hand, the Executive Vice President and Treasurer.

The main document in the field of QA at the University of Oxford is the "University Quality Assurance Management System" (University of Oxford, n.d.), which summarizes materials on key bodies responsible for quality assurance and the official integration structure.

The California Institute of Technology ensures quality through the activities of the Audit Service and the Compliance Institute (ASIC Department, n.d.), which conduct financial, operational and information technology audits in accordance with approved plans and established policies and procedures.

The University of Pennsylvania has adopted the Integrated Internal Control System (IICF), an adaptation of the COSO (Committee of Sponsoring Organizations of the Treadway Commission) (University of Pennsylvania, 2020), to be used as the basis for an internal control and regulatory compliance environment. This structure defines internal control as a process carried out by the board of directors, management and other personnel of the organization.

The University of Melbourne is, in some ways, encouraged by the national regulation and quality assessment mechanism governing Australian higher education, introduced by the Commonwealth Government in 2011 (ESOS Framework). Universities in Australia operate in accordance with the Higher Education Standards System (Threshold Standards) of 2021, as well as the Educational Services for International Students Act 2000 (EOS Act) and related documents (EOS Base) (Higher Education Quality and Standards Agency (TEQSA), 2021).

University College London (UCL) publishes on its official website annually the UCL Academic Policy (Academic Manual) (UCl, 2023), which includes academic rules, policies and procedures applicable to all UCL faculty and research students who are enrolled for the 2023-2024 academic year. It includes rules for the curricula of departments and teachers, internal quality control and external examination, as well as collegial supervision of quality assurance (Ucl, 2023b).

The Office of Audit and Compliance (OAC) of Princeton University (Princeton University, 2024) acts as an active partner of the university's management and staff in improving business processes and strengthening internal control and compliance mechanisms by forecasting and managing business risks, ensuring reliable asset management of the university, and ensuring the integrity of operational and financial information.

Quality Management (QM) at the Technical University of Munich (TUM) (Evaluation - TUM, 2021) is a university-wide management tool for monitoring all aspects affecting the quality of learning and teaching. The focus is on students and the quality of their education.

The universities represented, which are among the top 30 best universities in the world, build their IQAS on constant monitoring of business processes, assessment of the quality of programs, expectations of students and stakeholders, based on the activities and decision-making by collegial bodies of the university, and the involvement of experts in the field of higher education.

An analysis of 107 official websites of Kazakhstani universities on the representation of Quality Assurance Policies and internal Quality assurance standards showed that 79 universities posted Policies and standards, 40 – only Policies, despite the principles of the Bologna Process on openness, transparency, and public participation in quality assurance.

There are several examples of the organization of a quality assurance system in Kazakhstani universities. For example, at Yessenov University, the Internal Assurance Policy and internal quality assurance standards are the basis of a logically structured and consistent internal quality assurance system of the Company. The system represents a cycle of continuous improvement and supports the development of a culture of quality at all levels of functioning of Society (Yessenov University, 2020).

The concept of academic quality of the autonomous organization of Nazarbayev University and the relevant policies have been developed based on international standards, Standards and recommendations for quality assurance in the European Higher Education Area,

support the mission and strategy of Nazarbayev University and reflect national imperatives that determines an institutional approach to quality assurance and improvement and covers the following 5 processes: program approval; annual program monitoring; student engagement; external review; periodic review (Nazarbayev University, 2014).

Maqsut Narikbayev University ensuring the achievement of the required level of quality, its gradual improvement, and the formation of a culture of quality assurance is implemented through a Policy to ensure academic quality (KAZGUU, 2019). This policy includes guidelines on academic integrity, inclusive education policies, and internal quality assurance mechanisms.

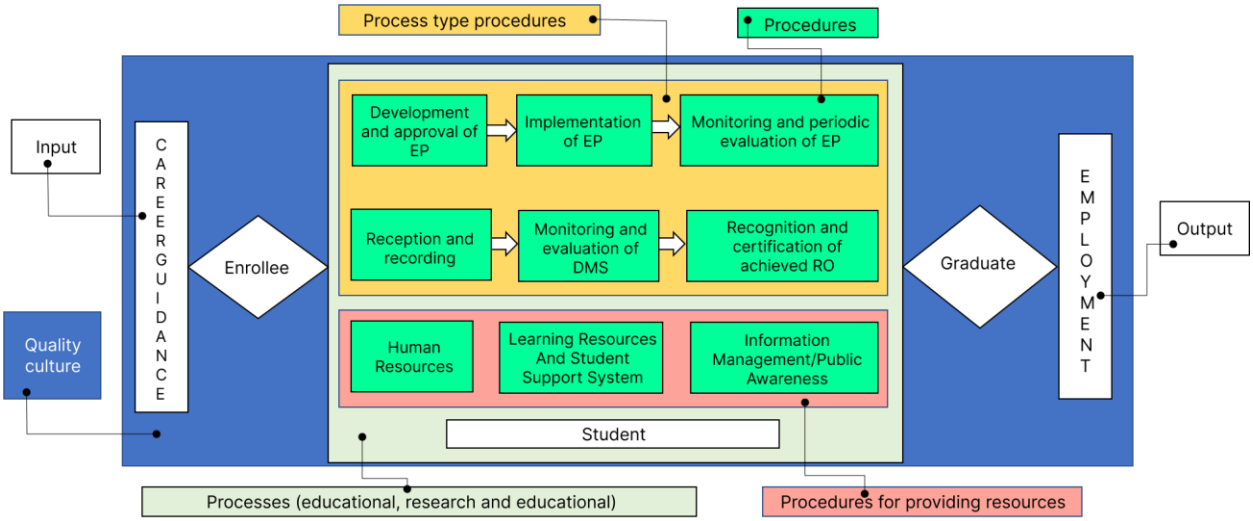
The analysis carried out and the examples presented allow us to present the results of the development of the architecture of the quality assurance system in a particular university.

Compliance with applicable laws and regulations.

To develop the architecture of a quality assurance system, it is necessary first of all to "build" a cycle of higher education from "entry" to "exit". Since Kazakhstan has been a full member of the Bologna Process since 2010, ESGs are based on the cycle (Figure 1).

Figure 1

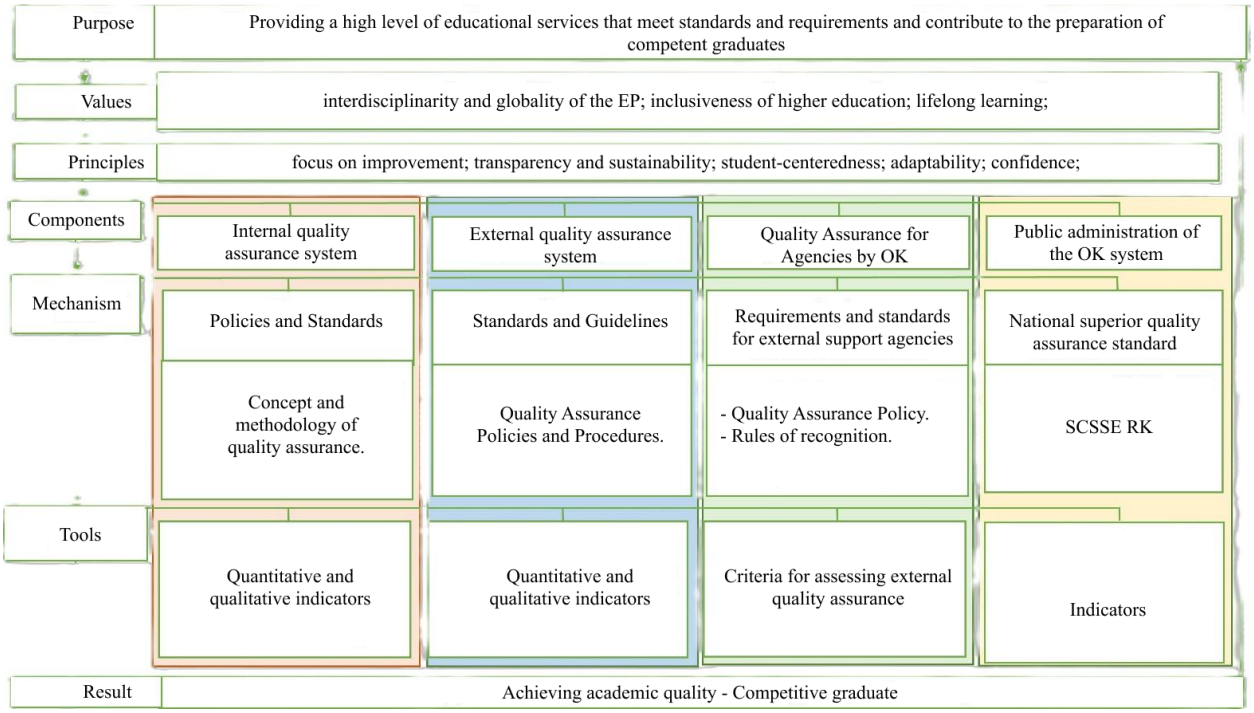
The cycle of higher education functioning (based on ESG)



The map shows that the ESG standards and regulations are reflected in the content of the relevant regulatory documents.

Further, based on the description of the improved national quality assurance model, the relationship between its components and legislative and regulatory acts, we developed a structural architecture of the QA system of higher education, consisting of targeted, methodological, meaningful, and effective blocks (Figure 2).

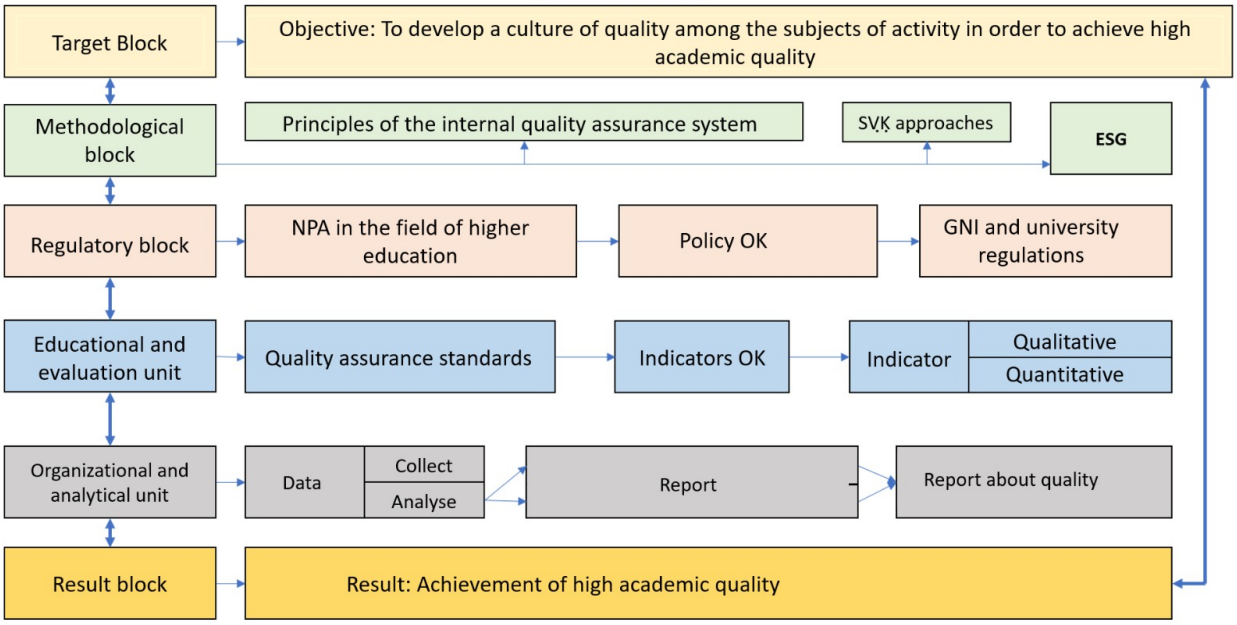
Figure 2
Structural architecture of the higher education quality assurance system



In defining a concept of "quality", we adhere to the point of view of Jessop (2012), who believes that quality assurance "involves a comprehensive assessment of results, as well as the complexity of results." That is, the concept of quality should be considered both from the point of view of the consumer, reflecting compliance with the goal, and from the point of view of compliance with the use or consumption of an educational service (product).

Employers set requirements for the high quality of the educational program and the qualitative characteristics of graduates. In this regard, HEIs should constantly work on all these factors to ensure the quality of higher education. Considering the above and bearing in mind the practical significance for universities the authors have developed a separate architecture for IQAS in the form of a structural model (Figure 3).

Figure 3
General model of the internal quality assurance system



The developed general (structural) model of the internal quality assurance system consists of the following blocks:

1) target – where the purpose of the system is defined;

2) methodological – where the principles and approaches to quality assurance are defined;

3) regulatory – where the legal framework of the system is defined;

4) substantive and evaluative, covering standards, indicators (criteria) and quality indicators;

5) organizational and analytical - procedural and procedural steps for the implementation of the system;

6) effective, determining the expected result of the quality assurance system.

All blocks of the system are logically interconnected vertically and horizontally.

The main principles of the internal quality assurance system for the university are the following (Omirbayev et al., 2023):

1) quality assurance corresponds to the diversity of higher education systems and students;

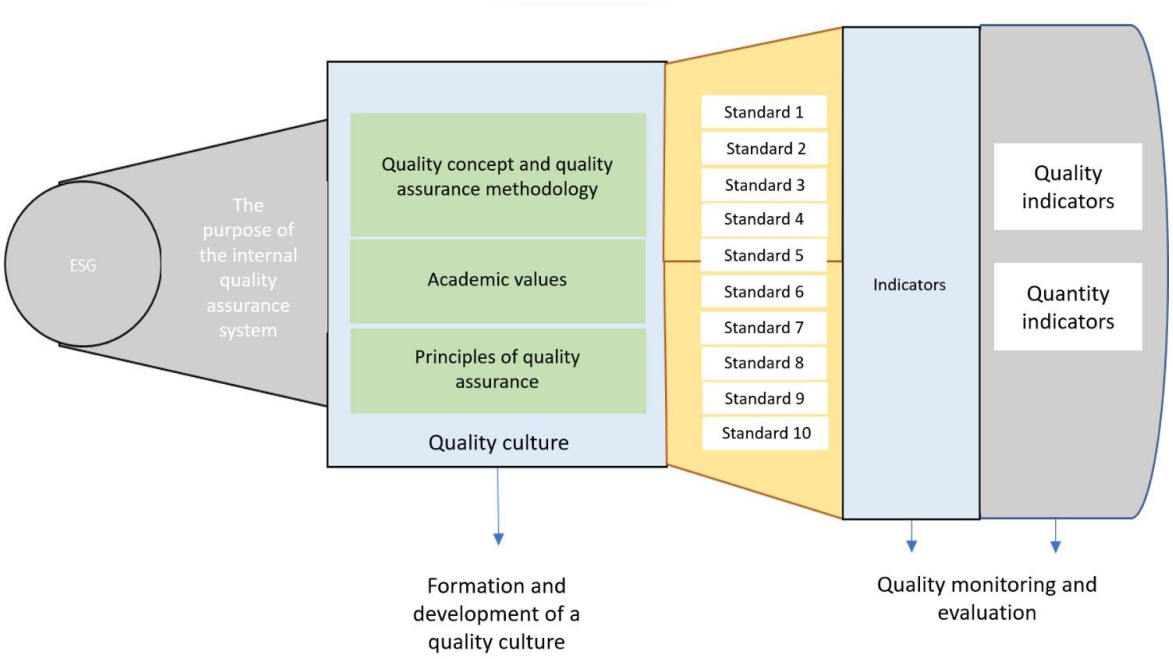
2) compliance of HEI activities with legislative and regulatory requirements, ESG recommendations;

3) quality assurance and improvement are applicable to all educational programs implemented by HEI;

4) leading role of HEI management in ensuring the unity of strategy, policy and procedures, involving all employees and students in quality assurance activities…

The content and evaluation block of the internal control system model consists of the policy and standards of assurance, criteria, and quality indicators for 10 QA standards. In general, the micromodel of this block can be structurally shown as follows (Figure 4).

Figure 4
Content and evaluation block of the internal quality assurance system



For clarity, we can give an example from practice on the content of standard 1.2. "Development and approval of educational programs" to show how internal processes can be regulated (AITU 2.0 internal quality assurance standards).

The algorithm looks like as follows:

1) on the basis of ESG and regulatory legal documents of the Republic of Kazakhstan in the field of higher and postgraduate education, the provisions of standard 1.2 "Development and approval of educational programs" and guidance, as well as its criteria, are formulated;

2) further procedures are defined and documented;

3) regulations have been developed for each procedure and described in flowcharts.

During the development of Part 1.2 "Development and approval of educational programs" of the Internal Quality Assurance System of HEI, the fundamental documents of the Bologna process are "European Standards and guidelines for quality assurance in EHEA" (Standard 1.2) and the European Credit Transfer System.

To assess the compliance of standards with the required parameters, the following criteria of Part 1.2 are defined:

1. Educational programs comply with the State Standard of Higher and Postgraduate Education, the Guidelines for the Use of ECTS, NQF RK, SQF, professional standards.
2. Educational programs consider the requirements of the labor market and the expectations of employers.
3. Educational programs are practice-oriented, types of training sessions and learning technologies are aimed at instilling skills and competencies at students.
4. Learning outcomes correlate with the descriptors of the State hgher and postgraduate education, NQF HE RK.
5. Educational programs ensure consistency of competencies, learning outcomes and academic credits in the context of academic disciplines, modules and the program as a whole.
6. Microqualification has an independent value and includes assessment based on well-defined standards, including by recognizing prior learning.

Further, the guidelines for the implementation of the provisions of Part 1.2 are defined:

1. Academic policy, Rules for the development of educational programs of higher and postgraduate education regulate the internal procedures for the development and approval of educational programs.

2. Educational programs are developed in accordance with the Rules for the development of educational programs of higher and postgraduate education.

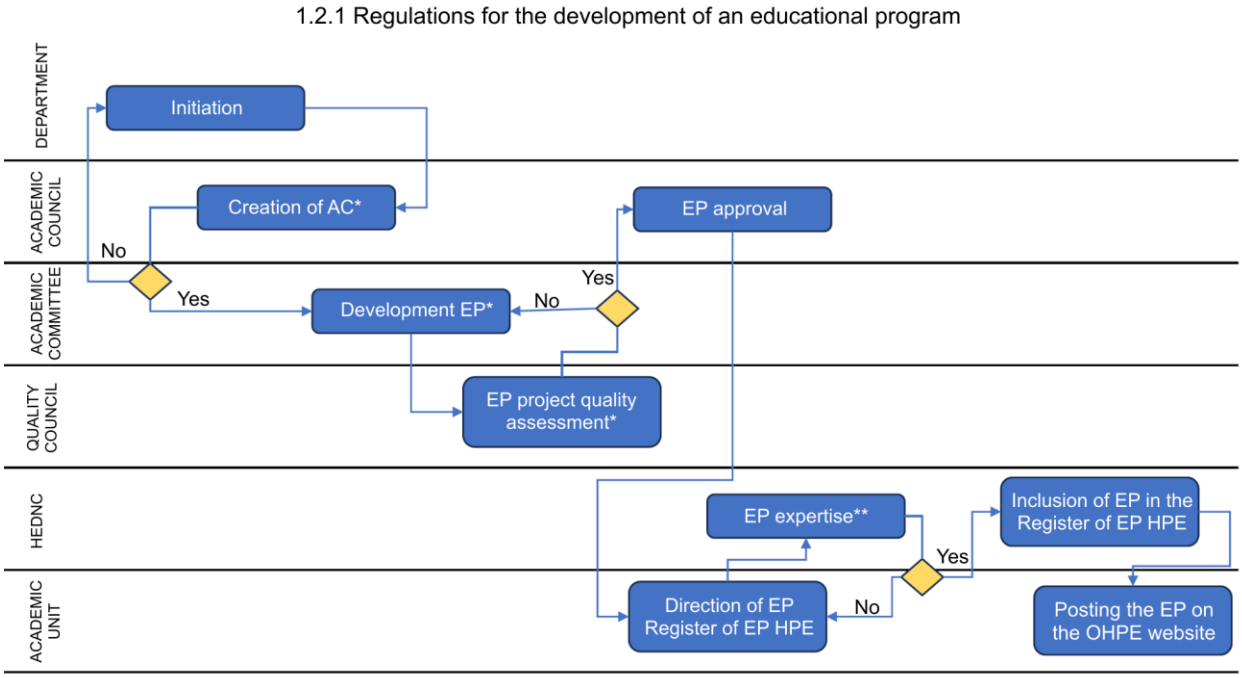
Practice has shown that the main processes of part 1.2 of the internal quality assurance system are "Development of educational programs", "Making changes and additions to educational programs" and "Development and approval of the Catalog of elective disciplines" (in principle, more procedures can be defined, but these procedures are the main ones).

For each process/procedure, the main owners, participants and the implementation procedure are determined in accordance with internal regulatory documents.

The flowchart of the 1.2.1 process "Development and approval of educational programs" is shown in Figure 5.

Figure 5

Regulations of the process "1.2.1 – Development and approval of educational programs"



* In accordance with the Development Strategy and Academic Policy of OHPE

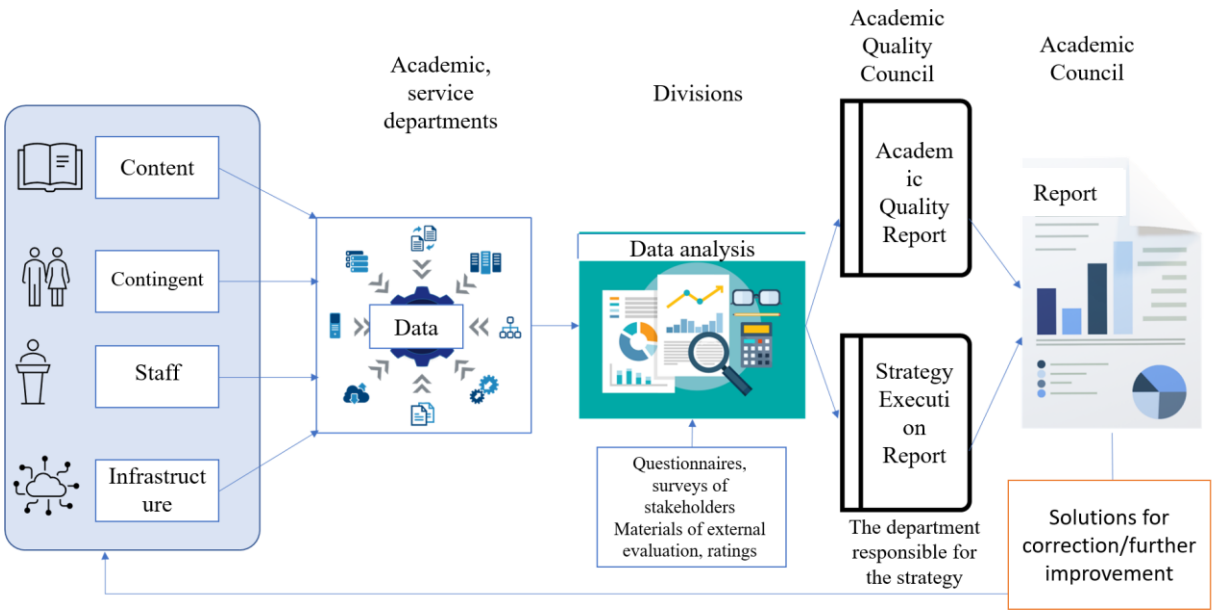
** In accordance with the Rules for the development of educational programs for higher and postgraduate education OHPE

*** In accordance with the Rules for maintaining the register of educational programs implemented by organizations of higher and (or) postgraduate education, as well as the grounds for inclusion in the register of educational programs and exclusion from it

Using the example of Part 1.2 "Development and approval of educational programs" of the internal quality assurance system, an algorithm for regulating processes is shown. All other 9 standards of IQAS should be regulated in this way.

We turn to the following blocks of the internal quality assurance system model – organizational and analytical, responsible for the procedural steps of the system implementation. In accordance with the quality assurance parameters, the following scheme of the organizational and analytical block of the internal quality assurance system model is constructed (Figure 6):

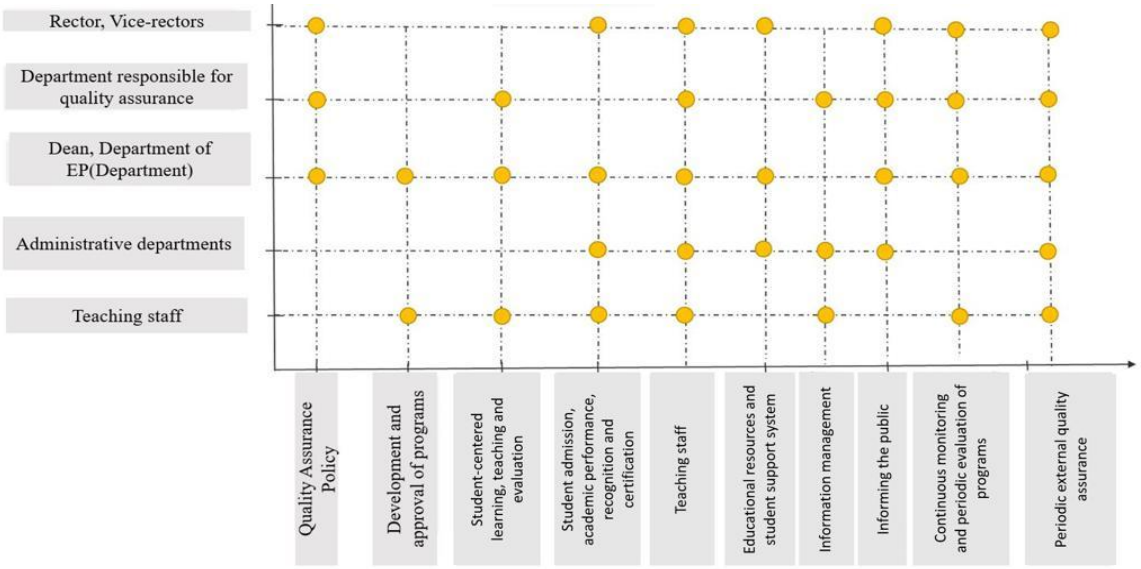
Figure 6
Organizational and analytical block of the internal quality assurance system model



As can be seen in the figure, an important place is given to data collection and analysis. This is natural, since for the successful operation of the system, an approach based on decision-making based on big data is necessary.

It is also equally important that all participants in the process participate in the development and implementation of a quality assurance system at HEI level: these are administrative, teaching staff, students. The matrix of their participation in IQAS can be shown as follows (Figure 7):

Figure 7
Matrix of involvement of HEI employees in the implementation of the standards of IQAS



In the matrix, the yellow dots at the intersections indicate the participation of one or another employee of the relevant department in the implementation of the standards of internal quality assurance of the university. Based on the density of such points, it can be concluded that all university employees are directly involved in the quality assurance system.

Thus, HEI IQAS should be aimed at maintaining high standards of quality of educational services of the university, as well as ensuring the link between education, research and innovation through the involvement of the world's leading experts in the field of information and digital technologies; the formation of a resource base for conducting scientific research of a fundamental and applied nature; the creation of laboratories of vendor companies, focused on the country's economy; ensuring a sufficient level of student civic maturity and the necessary measures to provide social support to students and university staff to increase competitiveness.

Conclusions

The model of IQAS is based on the values of a culture of quality among the entire higher education community: academic staff, students, administrative and managerial staff, employers, government agencies and others, according to which everyone is aware of their obligations and responsibilities to ensure and improve quality.

Modern problems of internal quality assurance of higher education are of great relevance for organizations of higher and postgraduate education in Kazakhstan since the modern period of modernization of the higher education system involves both structural changes and updating the content of educational programs and learning technologies.

Kazakhstan, as a full member of EHEA, forms its HE quality assurance system in accordance with European approaches, namely based on Standards and Guidelines for Quality Assurance in EHEA. This is the implementation in Kazakhstan's education not only of the commitments undertaken, but also meets the internal needs of education and national interests.

The results obtained allow us to draw the following conclusions:

- HEI IQAS should be aimed at maintaining high standards of quality of educational services of the university;
- the structural model of the university quality assurance system of higher education is aimed at the formation and maintenance of:

1) high-quality educational content;
2) a high-quality contingent;
3) high-quality personnel;
4) high-quality infrastructure.

The results obtained will help to set up the university's quality assurance system, thereby contributing to the training of highly competitive specialists for the country's economy.

Financing

This article was prepared within the framework of the scientific program "BR18574103 Improving the competitiveness of universities in Kazakhstan through the reengineering of the national quality assurance system of higher education" of the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan.

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

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DOI:10.59787/2413-5488-2024-48-4-96-105

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ISSUES IN UNIVERSITY AND INDUSTRY COLLABORATION: RESULTS OF A STAKEHOLDER SURVEY

Abstract: In 2024, Kazakhstan introduced a new science and technology policy to bridge academia and industry. Despite this, challenges persist due to conflicting goals, limited industry capacity, and bureaucratic obstacles. Based on a survey of 700 academics and 108 business representatives, this study identifies major barriers to collaboration, including the underdevelopment of high-tech industries, bureaucratic hurdles in research organizations, and insufficient funding. Notably, satisfaction varied by organization type, with state universities expressing higher satisfaction compared to private research institutions. These findings underscore the need for policy reforms that reduce bureaucratic barriers, enhance funding, and foster active engagement in university-industry partnerships for innovation.

Keywords: University-industry collaboration, Research commercialization, Barriers to innovation, Stakeholder engagement, Science policy

Introduction

In recent years, Kazakhstan has undertaken significant reforms to promote innovation and technological advancement, particularly by encouraging collaboration between academia and industry. The enactment of the 2024 Science and Technology Policy law marks a pivotal step toward bridging the traditional divide between universities and the private sector. This law replaces prior legislation on science and commercialization, offering updated guidelines and incentives aimed at enhancing research commercialization and facilitating a robust framework for applied research. Additionally, amendments to the tax code and other legal instruments have introduced tax incentives and streamlined procurement processes, fostering a more supportive environment for scientific and technological collaboration.

Despite the efforts made in recent years, the problem of the gap between academia and industry remains significant. Although universities in Kazakhstan are increasingly focused on applied research and innovation, their traditional focus on knowledge creation and education often contradicts the market-oriented goals of the private sector. The Ministry of Science and Higher Education is pursuing a policy of strengthening the connection between business and science. Work has begun to identify the tasks of large business that could be solved by domestic scientists. On the other hand, there is a certain resistance to such initiatives on the part of some representatives of the scientific community with a call not to turn industry science into a laboratory for factories (Zharmenov, 2024).

On the part of business in Kazakhstan, there is also a problem of low interest, as well as weak potential for the adoption of new technologies, especially at the regional level (Kenzhaliyev et al., 2021). Large companies that are open to innovation often buy off-the-shelf technologies overseas, with the rare exception of companies that set up their own R&D departments.

This study explores the current state of university-industry collaboration in Kazakhstan, analyzing barriers and stakeholder perspectives across academic and industry representatives. By examining these factors, the study contributes to a deeper understanding of the structural

and operational changes needed to support effective science-business partnerships in Kazakhstan.

Literature review and theoretical base

Research points to a potential problem where universities can turn to companies to sell their R&D as finished products without fully considering the market suitability or value proposition of the technology.(Battaglia et al., 2021) That is, there is a problem of mismatch between the results of scientific research and the needs of industry, which can hinder the successful transfer of technology and the commercialization of research results.(Ravi & Janodia, 2022) Technology intermediaries or innovation partners play a key role in understanding the needs of firms and translating them into academic units. They also identify potential applications of scientific knowledge from universities, facilitating knowledge transfer activities.(Bigliardi et al., 2015)

Also, without a clear methodology for assessing the cost of technologies, universities may experience difficulties in attracting potential partners or investors.(Dias & Porto, 2018) The use of the Technology Roadmap and Technology Readiness Levels (TRL) has been identified as useful for managing R&D and technology transfer efforts, indicating the need for strategic management of technology portfolios.(Lavoie & Daim, 2018) One of the barriers mentioned in the studies on Kazakhstan is the limited number of research results suitable for commercialization. Universities have few research results suitable for commercialization due to the embryonic nature of the technology, which often requires significant refinement.(Belitski et al., 2019)

Problems also arise from enterprises. Many companies, especially in regions with low technological intensity, have limited absorption capacity for R&D innovation due to their small size and the nature of their production processes.(Kenzhaliyev et al., 2021) This poses the challenge of effective technology transfer and commercialization, as universities may need to explore alternative forms of collaboration to meet the needs of such firms.(Ramos-Vielba & Fernández-Esquinas, 2012)

Another significant barrier in the commercialization process is the lack of interest and trust among the stakeholders involved in the process. Building trust and encouraging mutual interests is critical to overcoming these obstacles.(da Silva et al., 2022) The researchers recognize the importance of improving communication skills, clarifying project expectations, and adapting to the industry's short timelines to increase the success of collaborative projects.(Berman, 2008) Building trust at the individual and organizational levels is important for the success of joint initiatives.(O'Dwyer et al., 2023) In Kazakhstan, research has revealed a lack of emphasis on developing a sustainable culture of engagement with industry hampers long-term collaboration and innovation.(Jonbekova et al., 2020)

Interviews with scientists showed that some enterprises in Kazakhstan do not trust the competence of research groups and have limited confidence in the results of their research. This lack of trust stems from the belief that research in Kazakhstan does not yield meaningful results, causing skepticism about collaborating with domestic scientists on research and innovation projects.(Kuchumova et al., 2023)

Internal bureaucracy, lack of innovation culture, and insufficient human resources dedicated to technology transfer activities in academic institutions are significant obstacles.(Berman, 2008; da Silva et al., 2022) In Kazakhstan, the concept of commercialization and technology transfer offices is relatively new, as there was previously no need for mechanisms for the commercialization of knowledge and the protection of intellectual property (IP) in central planning systems. The development of standards to encourage the transfer of knowledge from universities has begun recently, which indicates the lack of an established infrastructure for effective technology transfer.(Belitski et al., 2019)

Commercialization offices are often perceived by scientists as additional bureaucratic structures, which reduces their influence on the commercialization of university research.(Belitski et al., 2019)

Research also highlights protracted internal procedures and competing stakeholder interests in universities as a significant obstacle to the technology transfer process.(Alexander et al., 2020; Dias & Porto, 2018)

The transfer of research results into market products or services is difficult due to the lack of knowledge in the field of business management among scientists and the lack of knowledge about entrepreneurial activities. There is a lack of skills and knowledge necessary for the effective commercialization of research results.(Ilysheva & Rozhkov, 2017) Despite the fact that scientists at universities have high technical knowledge, they often lack the necessary business and entrepreneurial skills.(Heng et al., 2012)

A study in Brazilian universities points to a lack of a strong culture of innovation and entrepreneurship.(Dias & Porto, 2018) Academic entrepreneurs may not have a full understanding of the commercialization process, which can lead to potential illusions and mistakes.(Maia & Claro, 2013) Supervisors involved in technology transfer may not have the necessary business skills, such as marketing and commercialization expertise.(McAdam et al., 2009) Formalized training and convergence of academia-industry links are important strategies to address these gaps and improve the efficiency of technology transfer.

Methodology

Based on a review of the scientific literature and interviews conducted on the project in which this article was prepared, the following barriers to interaction between science and business were identified:

1) Lack of platforms for meetings between scientists and business representatives
2) Lack of state support for the commercialization of the results of scientific and scientific-technical activities
3) Scientists' Lack of Understanding of Business Needs
4) Low level of developments of domestic scientists
5) Insufficient capacity of companies to implement new technologies
6) Lack of financial resources to work with scientists and introduce new technologies
7) Bureaucratic and Other Barriers in Scientific Organizations (Universities/Research Institutes)
8) Lack of understanding by companies of the need to innovate and attract scientists

These statements were included in a more extensive survey conducted by the Academy of Sciences of Kazakhstan under the President of the Republic of Kazakhstan from August 20 to September 30, 2024. Respondents evaluated each statement on a five-point scale, where 1- means "is not a barrier", 5 means "a significant barrier" and there is a variant that is difficult to answer.

The survey contained demographic data, including field of research, the type of organization (university/research institute, public/private) and other data. Business representatives indicated the company's industry, the level of interaction with scientific organizations, the level of innovation (the scale from "The company does not invest in new technologies and developments" to "The company has its own patents implemented in the production of goods or the provision of services") and other data.

Also, the survey measured the level of satisfaction of public administration in the field of science based on 32 indicators, including the following indicators: holding competitions for commercialization projects; promotion of research results for their application, implementation and commercialization; stimulation of cooperation between scientists and business. Respondents could choose the following options: Not satisfied (1), Rather dissatisfied (2),

Rather satisfied (3), Satisfied (4), Difficult to answer (-). The results related to overall satisfaction level presented here may differ from results issued by National Academy of Sciences due to data cleaning. Many respondents answered the first part on satisfaction level and failed to answer the second part on barriers and other questions. Some responses also indicated the tendency to straightlining.

The data was collected online through the SurveyMonkey platform. Respondents to the survey included academia and representatives of business and other stakeholders. Links to the questionnaire and invitations to participate are sent to all higher and postgraduate education organizations and research institutes of Kazakhstan for further distribution among employees. Data from business representatives and other stakeholders are collected through the business associations.

Results

1649 representatives of the scientific community and 270 representatives of business agreed to take part in the survey and filled it out. Respondents who did not respond to all parts of the questionnaire were removed from this number, or straightlining was observed where respondents spent very little time on the survey and chose the same answer option for questions in the same category. In summary, the analysis of the data for this article includes 700 responses from 1,649 academics and 108 business representatives

The majority of respondents are from state universities (see Table 1), which is natural, since they are the main employers for a large part of the scientific community. Representatives of private scientific organizations also participated in the research.

Table 1

Place of work of representatives of the scientific community

Place of work	Stake
Public Higher Education Institution	338
Private Higher Education Institution	134
State Research Organization	186
Private research organization	42
Altogether	700

The largest number of respondents conduct research in the field of natural sciences (See Table 2). In the study, researchers in the areas of social sciences and agricultural and veterinary sciences are least represented.

Table 2

Scientific directions of representatives of the scientific community

Scientific direction	Stake.
Agricultural and veterinary sciences	76
Engineering & Technology	129
Humanities	147
Medical & Healthcare	124
Science	151
Social sciences	73
Altogether	700

Most of the respondents are representatives of business and other stakeholders working in large businesses with more than 500 employees. Three respondents engaged in individual entrepreneurial activities also participated in the survey.

Table 3

The size of companies, business representatives and other stakeholders

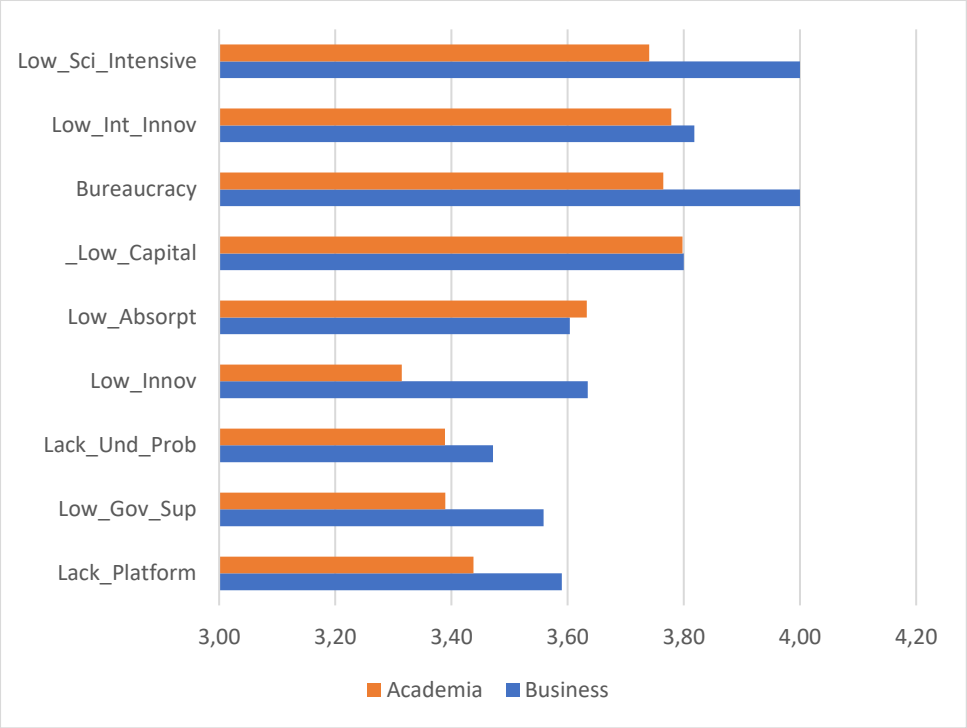
Company size	Stake.
More than 500 employees	46
100-500 employees	24
26-99 employees	25
Maximum of 25 employees	10
Individual entrepreneur without employees	3
Altogether	108

Barriers to interaction between science and business

The survey showed that the problems identified during the interviews are significant. The most significant barriers to interaction between business and science are the low level of development of knowledge-intensive industry and bureaucratic and other barriers in scientific organizations (Universities/Research Institutes).

Figure 1

Assessment of the level of materiality of barriers



Explanation of abbreviations in Figure 1:

- Lack_Platform - Lack of platforms for meetings between scientists and business representatives
- Low_Gov_Sup - Insufficient level of state support for the commercialization of the results of scientific and scientific-technical activities
- Lack_Und_Prob - Lack of understanding of business needs by scientists

- Low_Innov - Low level of development of domestic scientists
- Low_Absorpt - Insufficient capacity of companies to implement new technologies
- _Low_Capital - Lack of financial resources to work with scientists and introduce new technologies
- Bureaucracy - Bureaucratic and other barriers in scientific organizations (Universities/R&D institutions)
- Low_Int_Innov - Lack of understanding by companies of the need for innovation and involvement of scientists
- Low_Sci_Intensive - Low level of development of high-tech industry

The average values based on the results of the assessment by the scientific community and business are equal to the barrier - the lack of financial resources to work with scientists and introduce new technologies. The researchers also noted that the lack of understanding by companies of the need for innovation and attracting scientists is a fairly significant barrier, which is also agreed by representatives of business and other stakeholders.

Among the barriers, according to scientists, the low level of development of domestic scientists is not significant. Insufficient understanding of the needs of business by scientists is also not a very significant barrier in the opinion of representatives of business and the scientific community.

Satisfaction with public administration in the field of science and commercialization

Table 4 shows the overall level of satisfaction with public administration in the field of science for 32 indicators based on 808 answers and three indicators directly related to commercialization and interaction between science and business. For the indicator of stimulating cooperation between scientists and business, the lowest degree of satisfaction is observed, while satisfaction with holding competitions for commercialization projects is higher than the general level, according to the representatives of the business and other stakeholders (1.95 and 2.36 in Table 4).

Table 4

Average Satisfaction Values

Indicators	Scientific community	Business and other stakeholders
Holding Commercialization Project Tenders (Commer_Grant)	2.35	2.36
Promotion of research results for their application, implementation and commercialization (Applied_Research_Commer)	2.16	2.11
Stimulating cooperation between scientists and business (Bus_Sci_Cooperation)	2.03	1.95
Overall level of satisfaction according to 32 criteria (AvgSatisfaction)	2.37	2.19

Interestingly, there is a statistically significant positive correlation between the level of innovation of companies and the level of overall satisfaction with public administration in the field of science (p-value 0.0037, correlation coefficient 0.3). The ANOVA analysis shows a higher level of satisfaction at the third and fourth levels of innovation activity (2.53 and 2.40 in Table 5)). The difference in mean values is statistically significant (p-value 0.0064).

Table 5
ANOVA Results (Innovation and Satisfaction)

Level of innovation	n	mean	std. dev
1 - The company does not invest in new technologies and developments	11	1.88	0.81
2 - The company sometimes acquires and implements new technologies	21	1.82	0.71
3 - The company acquires and implements new technologies on a regular basis	15	2.53	0.81
4 - The company itself or in close cooperation with scientific organizations develops new technologies and implements	48	2.40	0.76

At the same time, the level of innovation does not correlate with the level of satisfaction with stimulating cooperation between scientists and business (p-value 0.1564). That is, companies that are already working closely with scientific organizations or developing technologies themselves are not entirely satisfied with measures in this direction.

The type of scientific organization also affects the overall level of satisfaction with public administration in the field of science. Analysis using the ANOVA test shows that there is a statistically significant difference between the mean values [p-value 0.000]. Public higher education institutions are the most satisfied with the management of science (2.49 in Table 6), while private research organizations are the least satisfied. means that more than 50% of respondents chose the answers "satisfied" or "rather satisfied".

Table 6
ANOVA Results (Type and Satisfaction)

Type of organization	**n**	**mean**	**std. dev**
Public Higher Education Institution	338	2.49	0.670
Private Higher Education Institution	134	2.31	0.72
State Research Organization	186	2.28	0.62
Private research organization	42	2.09	0.70

As for stimulating cooperation between scientists and business, this indicator also correlates with the type of scientific organization. The ANOVA test shows that there is a statistically significant difference between the mean values [p-value 0.0272]. Public higher education institutions are most satisfied with measures to *encourage cooperation between scientists and business (2.13*), while public and private research organizations are rather dissatisfied (1.90 and 1.75 in Table 7). universities do not have commercialization offices.

Table 7
Results of ANOVA (type of organization and stimulation of cooperation between business and science)

Type of organization	**n**	**mean**	**std. dev**
Public Higher Education Institution	251	2.13	0.92
Private Higher Education Institution	104	2.04	0.91
State Research Organization	147	1.90	0.89
Private research organization	36	1.75	0.10

Conclusion

An analysis of the responses to the survey of 700 representatives of the scientific community and 108 business representatives revealed key insights about the barriers and challenges affecting cooperation between science and business in Kazakhstan.

One of the most significant findings is the identification of the main barriers to cooperation between science and business. Both scientists and business representatives pointed to the low level of development of knowledge-intensive industries and bureaucratic barriers in research organizations as significant obstacles. In addition, the lack of funding for cooperation and the introduction of new technologies was also perceived as a common problem by both groups.

Scientists expressed concern about the lack of understanding by companies of the importance of innovation, and business representatives expressed similar opinions. Respondents among scientists do not perceive the low quality of domestic scientific developments or the limited understanding of business needs by scientists as the most significant barriers.

The level of satisfaction with the management of science and commercialization by the state also highlights the need for improvement to promote effective cooperation. Among the indicators analyzed, the lowest levels of satisfaction in both groups were related to the stimulation of cooperation between scientists and business. Despite initiatives to support commercialization, these results indicate a gap between policy intentions and practical outcomes, which may require a review of current measures and consideration of new incentives.

The analysis also showed a statistically significant positive correlation between companies' innovation and satisfaction with research administration, suggesting that companies with higher levels of innovation activity tend to be more satisfied. However, such a correlation was not found between innovation and satisfaction with measures to promote cooperation between science and business, which indicates problems with existing initiatives aimed at promoting cooperation.

Differences in satisfaction also arose depending on the type of scientific organization. Respondents from state universities are more satisfied than respondents from other types of organizations, with a lower degree. Satisfaction among private research organizations. These results indicate differences in the level of support or institutional infrastructure available to these organizations, especially with regard to commercialization opportunities, such as the availability of specialized technology transfer offices.

The research shows that reforms are needed to reduce bureaucratic barriers, improve funding mechanisms, and encourage both public and private organizations to engage in cooperation.

Funding Information

This research for this article is funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan. Project title - Improving the mechanisms for effective regulation of the applied R&D projects commercialization (BR21882077)

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

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DOI:10.59787/2413-5488-2024-48-4-106-125

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IMPLEMENTATION OF APPLIED BACHELOR'S DEGREE PROGRAMS IN KAZAKHSTAN: ANALYSIS OF STAKEHOLDERS' PERCEPTIONS

Abstract: Short-cycle educational programs in Kazakhstan are currently represented by applied bachelor degree programs. This first of its kind study was conducted to analyse the perceptions of applied bachelor programs by students, program graduates and employers in Kazakhstan. The results of the survey and interviews revealed a motivation for choosing applied bachelor programs among students of these programs and graduates, as well as the level of satisfaction with their choice. Employers' responses included an assessment of the training provided by the applied bachelor programs and whether programs graduates meet employers expectations. The authors concluded that applied bachelor programs ensure successful integration in the labor market. They provide access to training for socially vulnerable groups (e.g., part-time workers, unemployed people who do not follow traditional educational paths), increasing access to education. The practice-oriented nature of applied bachelor's degree programs allows to obtain qualified personnel in a shorter period of time compared to bachelor's degrees, which is beneficial for employers. Nevertheless, there were revealed problems related to the transition from NQF level 5 to level 6 for higher education, as well as insufficient information work of education providers to explain the advantages and features of applied bachelor degree programs. This suggests a need to take measures to further develop and strengthen the applied bachelor's degree in Kazakhstan. In general, it can be said that development prospects of applied bachelor's degree will contribute to the training of qualified personnel for the labor market.

Keywords: Applied bachelor degree, short-cycle educational programs, national qualifications system, education system, higher education, technical and vocational education, labor market, graduates, employers.

Introduction

The rapid development of new technologies has made it necessary for education systems to undergo radical modernisation. The dynamic development of society creates a rapidly changing labor market and leads to a widening gap between employer requirements and qualifications (Omirbaev et al., 2021). The disappearance of some professions and the emergence of new ones, the replacement of human labor by artificial intelligence requires workers to learn new practical skills, often at an accelerated pace.

In Kazakhstan, the number of students is currently over 600,000 and, according to the Minister of Science and Higher Education, will reach 1 million in six to seven years. It is clear that the education system "will be under enormous pressure" (Kuzekbai, 2022). In this regard, the government needs to enable the expansion of education infrastructure and increase access to educational services in a short time.

Moreover, there has been a problem of imbalance in the Kazakh labor market for several years, namely, a shortage of middle-level employees and a low level of professional

employment among college graduates. It is important to note that youth determine the labor market in the country (60% of all employees), and every year more than 300 thousand young people reach working age, which underlines the urgency of solutions for this problem (Galushko, 2023).

One solution to the imbalance between the theoretical and practical training of graduates is the development and implementation of short-cycle programs focused on practice and providing students with professional knowledge, skills, and competencies that facilitate entry into the labor market (Cremonini, 2010).

According to the International Standard Classification of Education (ISCED) (2011), short-cycle programs were developed with the aim of providing students with professional knowledge, skills, and competencies, focused on specific professions. Short-cycle programs are shorter, practical, and less theoretical than bachelor's degree programs, the main purpose of which is to prepare students for the labor market.

The Bologna Process — which seeks to create an accessible, inclusive, and uniform higher-education system across Europe — was a special incentive in the development of tertiary non-university education, and adds value in terms of compliance with the qualifications provided based on the requirements of the labor market, and increasing employment opportunities for the qualified. Kazakhstan, being a member of the Bologna Process since 2010, has developed and adopted the National Qualifications Framework (NQF) including all levels of education. The 5th level of the NQF in Kazakhstan is represented by applied bachelor programs. The introduction of the programs started experimentally in 2018 in higher colleges, and from 2021 in higher education institutions.

The introduction of applied bachelor's degree programs has served as an additional incentive to attract young people to TVET organizations, having a shorter period of study and lower cost, which is relevant for socially vulnerable groups: part-time workers; students who just finished military reserve; students on maternity leave, etc. The practical orientation of training for specific employer needs makes graduates of these programs attractive to employers.

However, graduates of applied bachelor programs face a number of challenges upon graduation. In particular, graduates of college programs have no advantage when applying for further study and qualifications up to NQF level 6.

As applied bachelor programs are being introduced in Kazakhstan relatively recently, there is limited information available on the benefits of these programs for students and employers, their accessibility, and their role for career opportunities and lifelong learning.

In this regard, an evaluation study of applied bachelor's degrees programs in Kazakhstan was conducted among students who are in the process of taking these programs, graduates completed the programs, and employers involved in the learning process (e.g. contributed to the design of the educational program, provided internship placements) and have experience of employing applied bachelor's graduates. The participants of the field research included representatives of educational institutions - teachers, administrative staff. Therefore, the subject of the study is limited to the direct participants of applied bachelor programs.

Such a study, in our opinion, will give impetus and determine the right trajectory of further actions to explore applied bachelor's degree programs in Kazakhstan and make recommendations for further development. The study might be useful for countries that are also at the initial stage of introducing short-cycle educational programs to the education system.

Research Methods

Research on the implementation of the applied bachelor's degree in Kazakhstan comprised two stages: analytical and empirical research.

Analytical research included a review of documents regulating applied bachelor's degree programs in Kazakhstan, analysis of secondary data (articles, presentations, methodological recommendations, etc.), research and analysis of international experience in implementing applied bachelor's degree programs, as well as analysis and synthesis, systematisation and comparison of scientific, educational and methodological literature on the research topic. These analyses helped us define characteristics of applied bachelor's degree programs worldwide and development stages of applied bachelor's degree program in Kazakhstan.

The next step was to conduct an empirical study to find out how applied bachelor's degree programs assessed by stakeholders: employers, students and graduates. Therefore, a case study was applied, which is considered a universally applicable research methodology for small-scale studies in education (Tight, 2003).

Applying case studies, it is important to identify the case itself, or the "bounded system" that is the object of the study (Creswell, 2012; Yin, 2014). It should be noted that case studies are difficult to generalise to other situations or contexts, which is a major drawback of research with this approach (Gall et al., 2007; Yin, 2014). However, the results and the findings of the study will contribute significantly to the further development of applied bachelor education in Kazakhstan. In addition, the case of Kazakhstan will be useful for other countries implementing this type of education.

Both quantitative and qualitative approaches were used to conduct the empirical study in order to gain a broader and more detailed understanding of the research subject (Johnson et al, 2007; Gläser-Zikuda, 2019), as well as to enhance validity of the data and its interpretation (Zohrabi, 2013). In addition, quantitative and qualitative methods of data collection and analysis were used simultaneously to ensure that the results complement each other and expand an understanding of a study phenomenon (Kuckartz, 2014). Therefore, a parallel mixed-methods design was utilised.

In order to specify the study subject, clarifying questions were used to identify what will be studied as an assessment of applied bachelor programs or its perception. Firstly, an extent to which the applied bachelor meets the needs of students, graduates and employers in the labor market to be understood. Secondly, it is necessary to find out what motivation and logic behind the choice of applied bachelor programs among students and graduates are. And thirdly, how the implementation of the applied bachelor is assessed by the stakeholders of the programs.

Qualitative (stakeholder interviews, field visits) and quantitative (survey) data collection methods were used to answer the above mentioned questions.

Survey

The purpose of a survey was to determine how the applied bachelor is perceived as a level of education by employers, students and graduates, and to what extent it meets their needs in the labor market, and what affected the choice of this program by students and graduates.

To collect data, two questionnaires were developed: one for the students and graduates of applied bachelor programs, and another one for the employers. The research questions were operationalize into indicators (motives and choice strategies, assessment of labor market integration, and level of satisfaction) that consisted of a set of variables (Morrison & Lawrence Manion, 2011) (Table 1).

Table 1
Indicators and variables for the survey

Indicators	Variables	Respondent group
Motives and choice strategies	Social status prior to enrolling in an applied bachelor's degree program The source of information on the program of applied bachelor's studies The sequence of the choice of an applied bachelor's degree program, the rationality of the choice, the applied bachelor's degree as a target or alternative option Factors influencing the choice: related field of study, external factors, motives, work experience The strategy for selecting an applied bachelor's degree program: comparison with higher education and TVET.	Students and graduates
Labor market integration: **1.Labor market entry assessment** **2.Assessment of the relevance of training to employers' requirements** **3.Assessment of opportunities for advancement in profession**	Ease of employment, sufficiency of diploma as an entry level and qualification. Matching employers' requirements: knowledge, skills, independence, work experience, soft skills. Impact of an applied bachelor's degree program on promotion, salary level and its increase, continuing education.	Students, graduates and employers
Satisfaction level	Assessment of the satisfaction level with the training placements, studies, compliance with expectations; education within an applied bachelor's degree program (employers).	Students, graduates and employers

Motivation and choice strategies were measured mainly through the construction of contingency tables with variables "social status before admission" and "type of desired educational institution before admission", the distribution of responses "motives for choice", contingency tables with variables "social status before admission" and "motives for choice".

Assessment of labor market integration was measured with a set of questions about how easy or difficult it would be to find a job with an applied bachelor's degree, to what extent the training in the applied bachelor's program meets the needs of employers, and whether there are prospects for professional and career advancement. The level of satisfaction was measured through questions assessing on a 4-level scale the degree of satisfaction with studies, internship places, and quality of training of applied bachelor graduates. Frequency distributions and contingency coefficients were conducted using these variables.

It should be noted that all groups of respondents were accessed through institutions providing applied bachelor's degree programs. The study was conducted as part of a research project funded by the Ministry of Science and Higher Education of the Republic of Kazakhstan, which enabled the research team's cooperation with universities and higher colleges.

The survey was conducted among three groups of respondents:

a) students of applied bachelor programs - full-time students in applied bachelor programs of higher colleges and pilot universities (anonymously);

b) graduates of applied bachelor programs - persons who have completed their studies and received an applied bachelor diploma from higher colleges (anonymously);

c) employers - representatives of enterprises, firms, institutions providing internship places for students of applied bachelor programs and/or employing an applied bachelor graduate (not anonymous).

The sample includes 624 students and 216 graduates of applied undergraduate programs, and 57 employers. Sampling was done with a non-probability convenient sampling method (Baur, 2019).

The survey was conducted using the Google Forms tool. Participants were informed about voluntary participation. Links to the survey in two languages (Kazakh and Russian) were sent to representatives of the administration of educational institutions. Representatives of educational institutions' administration sent survey links to their staff - teachers, group supervisors and departmental staff. The staff of educational institutions, in their turn, distributed links to the survey among students and graduates of applied bachelor programs and employers. The structural composition of the respondents - students, graduates and employers - in comparison with the available information on applied bachelor specialities, institutions and regions allows us to conclude that the sample includes the main socio-demographic groups of target (statistical) population.

The data were processed using Statistical Package for Social Sciences (SPSS) and analysed using descriptive statistics (Khalid et al., 2012) - frequency distributions, percentages and contingency tables. To determine the strength of association between variables, contingency coefficients were calculated for some contingency tables.

Field study

The field study included visits to 15 colleges providing applied bachelor programs in three regions of the country: Akmola, Karaganda, and Pavlodar, where industry is concentrated and there is a need for technical personnel. The colleges already implementing applied bachelor's degrees at the time of the study were selected for the visit.

Key participants included employers, representatives of student organizations, and representatives of educational institutions, totally 34 people (including 15 students and graduates, 9 representatives of university administrative staff and academic staff, and 10 employers). Data collection included group discussions and semi-structured interviews. Participants were selected in close cooperation with enterprises and educational institutions actively involved in the training and employment of graduates.

The purpose of the semi-structured interviews and the field visits was to collect qualitative data on motivation, perceptions and experiences of main stakeholders relating applied bachelor programs. While the survey was aimed at obtaining an assessment and measuring the level of satisfaction with the program, the field study was conducted to understand the perceptions, attitudes, and experiences of the participants.

Individual interviews with students and employers were between 15 and 25 minutes in length. This allowed sufficient coverage of key aspects while maintaining the attention and interest of the participants. The group discussions were between 30 and 45 minutes in length, allowing for a more in-depth and varied consideration of topics and issues.

All subjects gave their informed consent for voluntary inclusion in the study before they took part in the study. The interviews and discussions were recorded and transcribed and processed. Only the study organizers had access to the data.

All procedures carried out during the research complied with ethical standards and with the 1964 Declaration of Helsinki and its later amendments (2013).

Applied Bachelor's Degrees in the world and in Kazakhstan

First of all, in this article we analyzed the characteristics of applied bachelor degrees in the world and the peculiarities of its introduction in Kazakhstan.

In economically developed countries, the applied bachelor's degrees were introduced almost half a century ago, and as production became more complex in the 1970s, the need for high-skilled mid-level specialists increased. This trend was observed not only in high-tech industries and rapidly developing service sectors (tourism, consumer services, banking and finance, insurance, public transport, healthcare, social security), but also in traditional areas such as management, manufacturing, trade and construction.

Applied degrees focus on providing real-world experiences and incorporating job-related skills into the classroom. The degrees are mostly known as Bachelor of Applied Studies, Bachelor of Applied Sciences, or Bachelor of Science in Applied Studies. Internationally, the term 'short-cycle tertiary education' is used for all type of programs at level 5 ISCED. These programs are usually practically-based, occupationally specific and prepare students to enter the labour market, and typically (but not always) shorter than three years (ISCED 2011).

Applied degrees in Western European countries represent a system of higher non-academic education, implemented both in universities along with academic degree programs and in special vocational education institutions. In order to implement these programs, some countries created special educational institutions of a new type, where theoretical courses were closely related to the development of professional skills (Chugunov, 2010).

In some European countries, specialized educational institutions have been established to implement applied bachelor's degree programs. In Finland, 250 secondary vocational education institutions were reformed and reorganized by merging into polytechnics in order to implement applied bachelor's degree programs. In 1991, a pilot project was launched to create 22 temporary polytechnics from vocational education institutions, which led to the dissolution of the secondary vocational education system and the successful completion of the experiment in 1996. In France, applied or vocational baccalaureate programs are implemented in secondary vocational education institutions - lycées. In Great Britain applied bachelor's degree can be obtained through the system of vocational education (Further education), which combines schools, colleges, training centers, institutes at the production units and employment centers. In Germany, universities of applied sciences – Fachschulen - are specialized educational institutions for further vocational education. The diplomas are equivalent to Master's and Bachelor's degrees (Kennedy, 1996).

The Paris Communiqué of the EHEA Conference of Ministers of Education conceptualizes short cycles as stand-alone higher education qualifications with a dual purpose - preparation for the labour market and further study in higher education institutions (at the first cycle). A short cycle within the first cycle refers to qualifications typically comprising or represented by approximately 120 ECTS credits - in a national context. However, the organization and recognition of short-cycle qualifications within the first cycle of higher education remains voluntary. Each country can decide whether and how to integrate short-cycle qualifications into its national qualifications framework (Paris Communiqué, 2018).

In Kazakhstan, the need to introduce applied bachelor's degree programs at the higher education level was due, firstly, to the increased requirements of employers to employees: the labor market requires new skills that correspond to dynamically developing technologies, including basic knowledge (natural science), practice-oriented (technical and technological) professional competencies, and the ability to adapt quickly to new methods of production. Secondly, if only technical skills were required of middle-level specialists previously, today, it is necessary to have a certain theoretical basis. Step-by-step, the training of specialists in TVET organizations began to approach the level of higher education (OECD, 2014).

In this regard, in 2015, new definitions of "applied bachelor's degree" and "applied bachelor" were fixed in the Law of the Republic of Kazakhstan "On Education," which provide

for qualifications awarded to persons who have completed post-secondary educational programs that combine the advantages of higher education, and technical and vocational education programs.

Today, applied bachelor programs in Kazakhstan are divided into two types: the first type is implemented in technical and vocational education organizations (TVEOs) as post-secondary non-university programs; the second type is programs implemented in universities as the lowest level of higher education. In the Bologna system, the latter type is called short cycle of higher education.

It should be noted that the qualifications obtained after mastering both types of applied bachelor programs belong to level 5 of the National Qualifications Framework (Table 2).

Table 2

National Qualifications Framework of the Republic of Kazakhstan, Levels 3-6

Level	Ways to achieve
3	Basic secondary education and technical and vocational education (advanced level), or general secondary education and practical experience and/or vocational training (courses on the basis of the organization of education for programs of 6 vocational training up to one year or training at the enterprise)
4	General secondary education and technical and vocational education (mid-level specialist), general secondary education and practical experience
5	Post-secondary education (applied bachelor's degree), practical experience; at least two years of bachelor's degree or three years of mastering special higher education programs, practical experience
6	Higher education. Bachelor's degree, specialty, residency and practical experience

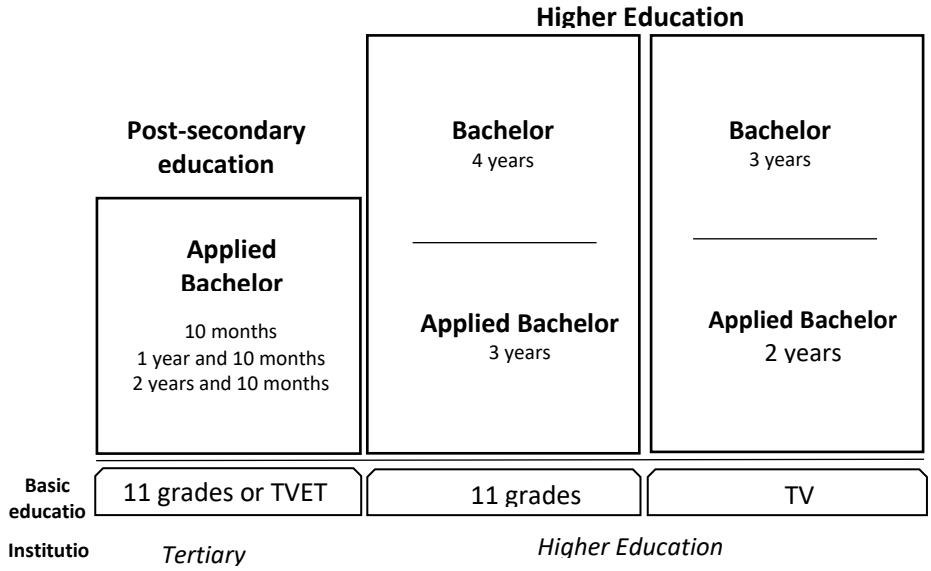
Educational programs have been designed to train highly qualified technicians, primary school teachers, preschool teachers, office workers, qualified nurses, etc. The basis was the integrated professional programs of universities and colleges, providing serious theoretical training and imparting practical skills in production according to the requirements of the industry qualifications framework and professional standards.

As experiment, applied bachelor's degree programs started in colleges of Kazakhstan in 2018, while educational institutions were awarded the status of "tertiary colleges." Currently, educational programs of the applied bachelor's degree have been implemented in 43 tertiary colleges in Kazakhstan. Depending on the basic level of education at entry, an applied bachelor's degree can take from 10 months to 2 years and 10 months to complete (Figure 1).

From 2022, applied bachelor's degree programs are also being piloted in 8 universities. As these programs are pilot programs, the graduate programs have not yet been implemented in the universities. Nevertheless, it is expected that graduates with an applied bachelor's degree will belong to the lowest level of higher education and will have the opportunity to continue their studies further to the level 6 NQF.

Figure 1

Procedure for obtaining an Applied Bachelor's degree



The introduction of applied bachelor's degree educational programs served as an additional incentive to attract young people to TVET organizations, with shorter training periods and lower costs, as well as a narrow practical focus. However, applied bachelor's degree program graduates face a number of problems after completing their studies.

First, applied bachelors are currently have been equated to middle-level specialists (technicians and technologists). Second, applied bachelors have no advantage in continuing their studies at higher educational institutions and accepted for the second year of studies, as middle-level specialists are. Thirdly, the analysis of sources showed that at the moment there is no comprehensive study on the state of implementation of these programs and there is a lack of knowledge about the perception of applied bachelor degree by the main stakeholders - employers, educational institutions, as well as students and graduates of applies bachelor degrees.

Kazakh researchers note that for the full implementation of applied bachelor's degree programs and their successful functioning, it is necessary to introduce and approve regulatory laws that ensure its effective legal functioning (Zhumasheva, 2022; Kulumzhanova, 2023). At the same time, researchers note the difficulty in the process of establishing effective communication between stakeholders (Ibadildin, 2022).

Matveeva (2018) notes that the attractiveness of applied bachelor's degree programs for Kazakhstani students is due to the possibility of profitable employment upon graduation.

Researchers have studied the advantages and features of these programs. Applied bachelor degrees allow students to be better prepared for work and careers with a combination of theoretical knowledge and practical skills (Cremonini, 2010; Finley, 2021; Kisker et al., 2013). Applied Bachelor programs are often developed in collaboration with employers and industry partners to ensure that the curriculum is aligned with industry needs. Work-based learning is a key component of Applied Bachelor programs, with students often spending a significant amount of time in the workplace, for example through internships and work placements.

An applied bachelor's degree aims to prepare students for a specific career rather than a general education. This makes this degree highly attractive to employers as it ensures that

graduates have the skills and knowledge necessary to succeed at the workplace (Cohen & Brawer, 2014).

Research on short-cycle programs in EHEA countries has shown that these programs can improve employability while promoting flexible learning pathways (Magda Kirsch & Yves Beernaert, 2011). Short-cycle higher education programs, which are shorter and more practical than undergraduate programs, are uniquely suited for staff development and retraining, a particular need in response to the COVID-19 pandemic (Dinarte-Diaz, 2022).

Thus, short-cycle programs can be a valuable workforce development tool in the modern era when people may change occupations or careers several times during their lives and need training that is fast, effective, and closely aligned with the labor market.

Results

Students

As part of our research on stakeholder perception of applied bachelor programs, we conducted a survey among students. The sample size was 624 students of applied bachelor degrees programs from 23 higher colleges and 8 universities. The following formula was used to calculate the minimum required sample size (Siripipatthanakul et al., 2023):

$[z^2 * p (1 - p)] / e^2$,

where $z = 1.96$ for a confidence level of 95% according to the normal distribution table; $p = 0.5$ (typically 0.5 for the desired proportion of the trait in the general population) and $e = 0.05$, for a sampling error of 5%.

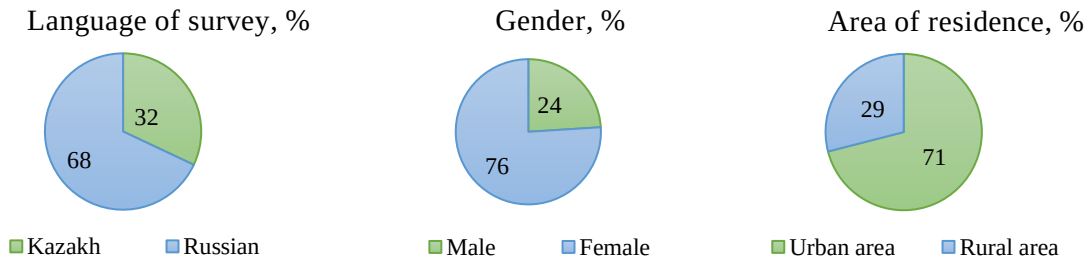
The sample population calculated using this formula was 384.16. The number of students interviewed exceeded the minimum required sample size for an unknown general population.

The questionnaire consisted of 40 questions: 8 - on socio-demographic portrait (gender, age, ethnicity, marital status, health limitations, place of residence, income level, region of residence); 6 – on compliance with the target group (educational institution, specialty, year of study, program duration, type of study); 26 - on the subject of the questionnaire. The questions on the subject of the study concerned the motives for choosing an applied bachelor's degree program for study, peculiarities of entering the labor market, satisfaction with the education received, etc. The questionnaire was applied to both students and graduates of applied bachelor programs.

Of the 624 survey participants, two-thirds preferred Russian as a survey language, the gender ratio is dominated by women (76%), and 71% come from urban areas (Figure 2).

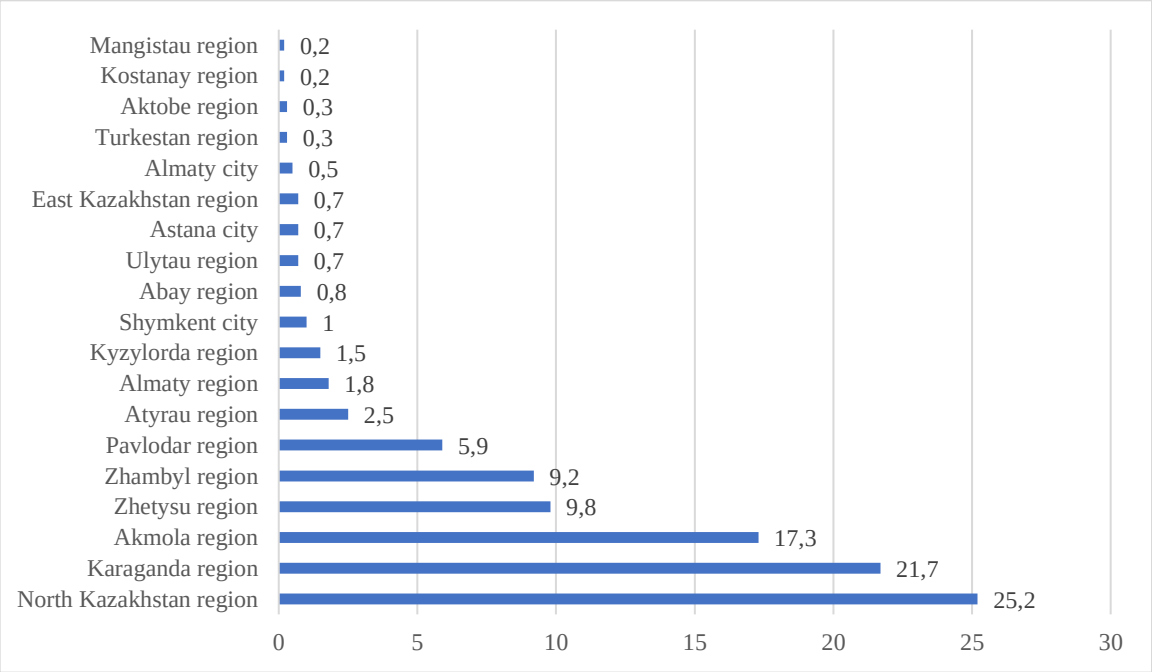
Figure 2

Surveyed students by survey language, gender and area of residence



More than two-thirds of applied bachelor's degree students who participated in the survey represent the northern and central regions of Kazakhstan: North-Kazakhstan region (25%), Karaganda region (22%) and Akmola region (17%). This is due to the fact that applied bachelor's degree programs were first introduced and became most widespread in these regions (Figure 3).

Figure 3
Students of applied bachelor's degree programs by region of residence (%)



The results of the study showed that the motives and strategy for choosing a program of study are related to the status and context at the time of choice. The close environment of the student - family, friends and teachers at school or college - has a great influence on the choice of study program. The admission committee of an educational institution can play an important role in the decision to enroll, especially for individuals who wish to enter the labor market or formalize their employment (Table 3).

Table 3
Motives for choosing an applied bachelor's degree program (%)

Why did you choose an applied bachelor's degree program to apply to a college (or university)?	**%**
On the advice of parents, friends	23
I want to graduate in a short time and start working	17
I didn't get education grant, and I can complete applied bachelor's degree more quickly	13
I didn't mind where to study, it was important for me just to get an education	13
I didn't get education grant at the university, and tuition fee is much cheaper at applied bachelor's degree	7
I didn't get where I wanted to	5
On the advice of the admissions committee	4
On the advice of the employer	4
There was no other choice	3
Other	2
I didn't choose an applied bachelor's degree, but apply for it as my friend/friends did	1
On the advice of bloggers and media	1

Difficult to answer	7

Two-thirds of respondents answered that an applied bachelor's degree was the first choice of education. However, one in five students (20%) did not consider the program as their first educational option, but chose it because of shorter study period than at the academic bachelor degree, lower cost of education and the possibility to enter the labor market immediately after graduation, which emphasizes the advantages of these programs.

School graduates often choose an applied bachelor's degree due to the fact that they have not entered the desired program of study (usually a grant at a university). For them, the applied bachelor's degree is an alternative option for obtaining profession. Those who were serving in the army at the time, working on temporary wages, unemployed, looking for a job, being on maternity leave considered an applied bachelor's degree as their desired education. Therefore, for socially vulnerable groups of students, enrollment in an applied bachelor's degree is seen as an opportunity to obtain a professional qualification for entering the labor market and gaining a stable status.

Nearly 45% of survey participants indicated that an applied bachelor's degree programs at college are more suitable for their professional goals than a degree from a regular college or university program. It should be noted that among the other response options was, “I didn't know there was an applied bachelor’s degree diploma.” Given the low proportion of students who learned about the applied bachelor degree program through advertising (7%) or the Internet (9%), we can assume an insufficient effort to disseminate information about the opportunities to obtain education in the applied bachelor degree program.

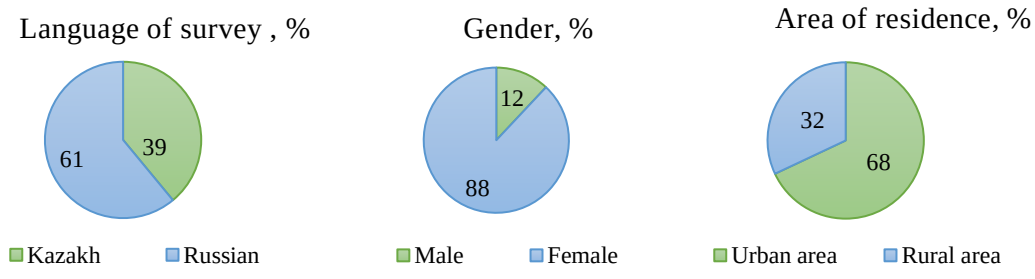
Lack of awareness of applied bachelor programs is also relevant issue among employers. For example, Employer #2 suggests: "...to regulate by law the communication between universities and colleges and between employers and graduates of applied bachelor degree program. Some employers do not know or have not heard what an applied bachelor degree program is, and approach this program with cautious attitude."

Graduates

In total, 216 graduates of applied bachelor’s degree programs from 19 colleges participated in the survey. Two-thirds of the participating graduates preferred Russian for the survey, the gender ratio is dominated by women (76%), and more than 68% of the respondents come from urban areas (Figure 4).

Figure 4

Graduates by survey language, gender and area of residence

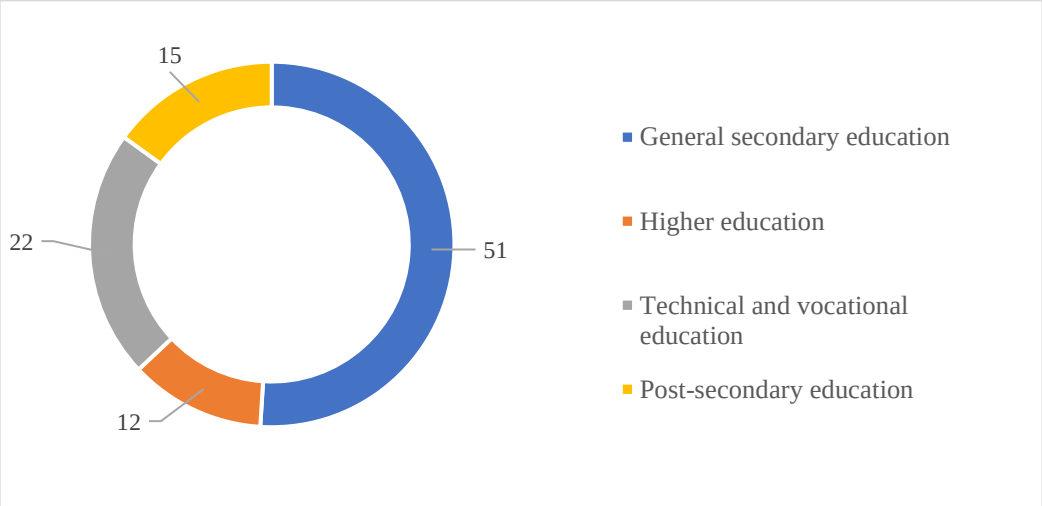


Almost two-thirds of the surveyed graduates of applied bachelor programs represent two regions - Akmola (36%) and Karaganda (27%) - the regions of the first applied bachelor programs in the country.

An applied bachelor's degree was the first option of desired education for 71% of surveyed graduates. Applied Bachelor's program became the second or alternative option for 18% of graduates. Most often, an applied bachelor's degree became an alternative option for those graduates who were in school prior to enrollment. Graduates who were already employed prior to enrollment, chose an applied bachelor's degree to obtain a professional qualification shortly.

Figure 5

Basic education when admitting to applied bachelor's degree programs (%)



More than half (51%) of the surveyed graduates entered applied bachelor's degree programs on the basis of general secondary education, while 12% entered on the basis of higher education. About 37% of applied bachelor's graduates entered on the basis of technical and vocational education (22%) and post-secondary education (15%) (Figure 5).

At the same time, respondents with technical and vocational education are more likely to choose applied bachelor's degree programs in a related field of study than those with post-secondary and higher education. Among the surveyed graduates enrolled on the basis of vocational education (TVET, post-secondary and tertiary), 83% indicated that they attended an applied bachelor in a field of study related to their previous education (Table 4). Therefore, graduates enrolled on the basis of technical and vocational education had the opportunity to increase the value of their qualification in a related specialty and improve their competitiveness at labor market.

Table 4

Applied bachelor's degree specialties (%)

Is the applied bachelor's degree major you graduated related to major from your previous education?	Based on TVET	Based on post-secondary education	Based on higher education
Yes	83%	63%	69%
No	4%	16%	19%
Not relevant, I don't have a previous post-secondary, TVET or tertiary degree	13%	22%	12%

Interviews with graduates of applied bachelor's degree programs revealed a desire to continue their studies, including enrolling in master's degree programs. For example, when interview participant #1 was asked, "What are your plans?" they answered "I plan to study for a master's degree in the future and continue to climb the career ladder." Participant #2 plans to continue their path in the same field and enroll in higher education. Thus, graduates of applied

bachelor's degree programs view their education as a starting point for further professional development and career advancement. This aspect emphasizes the importance of developing not only a mechanism for transition from NQF Level 5 to Level 6, but also the prospects for transition to Level 7.

The demand for graduates of applied bachelor's degree was confirmed by the results of the questions concerning employment. About 40% of surveyed graduates found a job in less than a month after graduation. Another 18% of surveyed graduates responded that they spent 1 to 3 months looking for a job. Almost 7% of graduates looked for a job after completing an applied bachelor's degree program for 3 to 6 months.

One third of the survey participants already knew during their studies where they would go to work, of which the majority chose a place of work during their internship (20%). About 30% of surveyed graduates of applied bachelor's degree chose a place of work and specialty before starting their studies. Among other responses, it was common that survey participants were already working before enrollment or during their studies. Nearly 71% of graduates indicated that an applied bachelor degree was more suitable for their goals than a regular college degree.

Graduates of applied bachelor's programs evaluated the compliance of their training level with the requirements of employers highly (> 80%). However, this high level of satisfaction with their studies was not confirmed by the indirect indicators of satisfaction (Figures 6,7).

Figure 6

Direct indicator of satisfaction with applied bachelor's degree program (%)

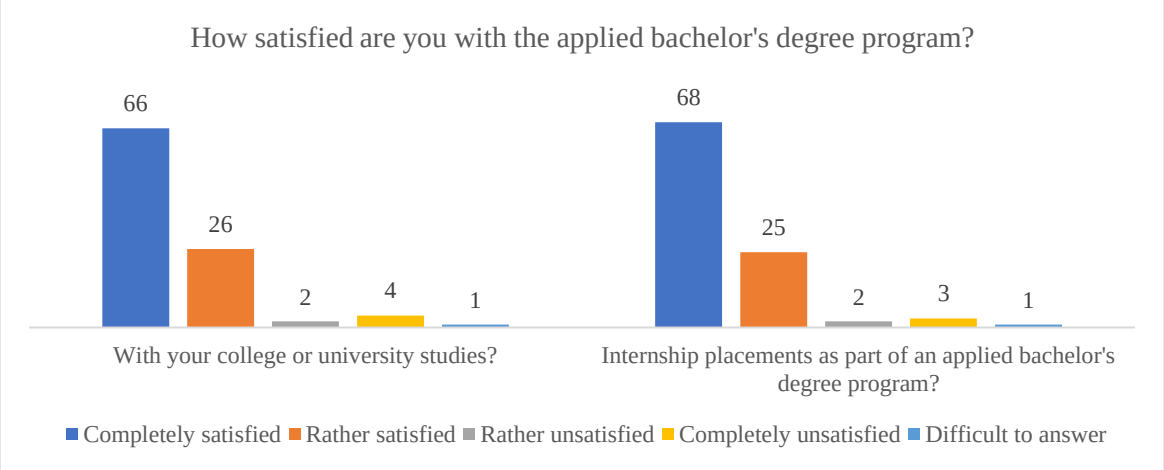
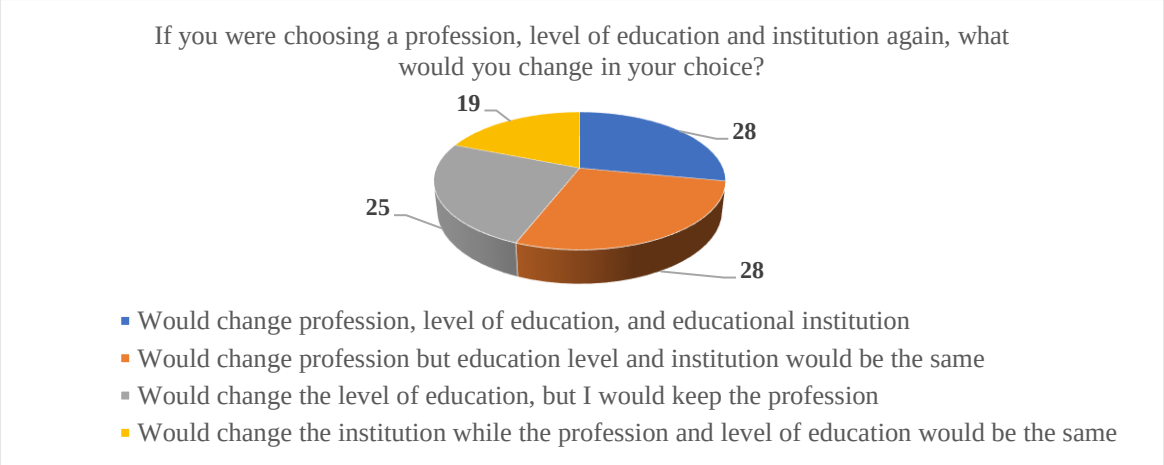


Figure 7

Indirect indicator of satisfaction with applied bachelor's degree program (%)



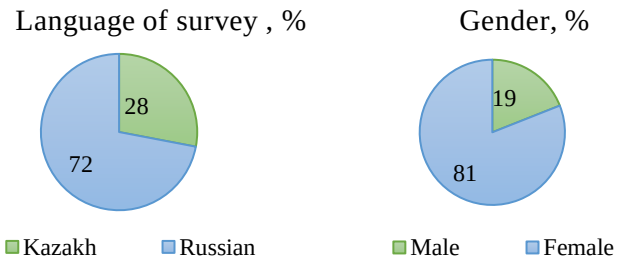
Graduates were asked that if they could choose a profession, level of education and educational institution again, what they would change in their choice. The answers received demonstrate that only 47% of surveyed graduates are satisfied with the level of education, i.e. applied bachelor's degree in college (the sum of answers where the level of education would remain the same).

Employers

A total of 57 employers participated in the survey. Kazakh language was preferred by 28% of employers to participate in the survey, 72% optioned to Russian. Among representatives of employers 81% are women, 19% are men (Figure 8).

Figure 8

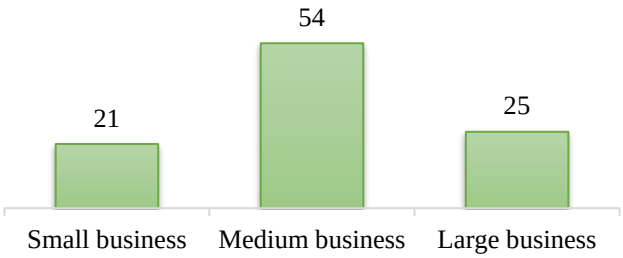
Employers by survey language, gender and area of residence (%)



The main type of cooperation between employers and educational institutions is providing places for students' internship - 75% of employers. Among the respondents-employers the most common was medium-sized business - 54% (Figure 9).

Figure 9

Employers surveyed by type of business, %



In terms of industries, the education sector prevails - more than half of the employers who participated in the survey. Next comes the sphere of health care and social services (25%).

The third place is occupied by the sphere of information and communication with 5% of employers.

It is worth noting that 75% of the surveyed employers provide internship places for students within the framework of cooperation with educational institutions, making the foundation for future employment of graduates.

Almost two thirds of employers believe that an applied bachelor's degree is enough to be employed by their organization. Therefore, this level of training is able to cover the demands of the labor market. Employers highly appreciated the applied bachelor degree programs. More than half of the employers believe that graduates' level of preparation for these programs meets their requirements. During interview when asked "In your opinion, is there a difference between graduates of TVET and applied bachelor degree?", one of the employers noted that the students who received education of applied bachelor degree have more work experience compared to the others, as they have theory and practice 40% to 60% respectively.

We consider it important that for 79% of respondents to some extent work experience in the specialty is crucial when hiring college and university graduates. This emphasizes the relevance of the practical components of the program and the possibility of internships and work placements with employers during training.

As for the benefits of an applied bachelor's degree for career growth, 26% of surveyed employers definitely consider an applied bachelor's degree when deciding on an employee's career development. Another 46% of respondents said that having an applied bachelor's degree is more likely to be considered. Cumulatively, a quarter of employers indicated to some degree that having an applied bachelor's degree does not affect an employee's career advancement.

When assigning a certain salary level to an employee, an applied bachelor's degree is clearly considered by 23% of the employers participated in the survey. Therefore, an applied bachelor's degree can positively impact the employers' decision on an employee's career advancement and partly on the setting of salary levels.

Employers, for whom having an applied bachelor's degree was relevant, were quite positive about the potential of these programs. In an interview with the question, "Do you, as an employer, need employees with an applied bachelor's degree?" Employer #1 responded, "Yes, they can get an applied bachelor's degree. So, they can work and study an applied bachelor's degree program part time accordingly."

Employer #2: "Even if students have a morning work shift, they can work with children for another 3-4 hours in the afternoon, combining this with their studies. They demonstrate their ability to combine study, work and practice." The possibility to work and improve qualifications the same time contributes significantly to the realization of the concept of lifelong learning and increases the flexibility of specialists in the labor market.

Discussion

An applied bachelor's degree provides students with practical skills and knowledge that can be applied in real life and work. According to students, graduates, and employers, applied bachelor's programs allow for successful entry and integration into the labor market, and meeting employers' requirements.

In addition, the applied bachelor's degree has several advantages that make the program more attractive and provide open access to education for socially vulnerable groups of students (part-time workers; students who just finished military reserve; students on maternity leave, etc.). The data shows that applied bachelor's degree programs were also chosen for secondary professions and advanced training. These programs are distinguished by their short duration, strong practical orientation, and reduced cost compared to academic bachelor's degree programs.

The advantages of the applied bachelor's programs are relevant to the implementation of lifelong learning concepts. Since they focus on the needs of the labor market, they are a convenient opportunity for professionals to improve their qualifications. These programs are also effectively used for adult education and retraining, which is important for the present demographics (Slantcheva-Durst, 2014).

The applied bachelor's degree can also be an optimal option for individuals with a non-classical educational pathway with long interruptions in education or change of profession and for those who have gained access to higher education through recognition of their professional qualifications (professional experience and specialized secondary education).

However, there is a major problem associated with the transition from the National NQF Level 5 to Level 6 in higher education. Graduates of applied bachelor's degree programs have no advantage in continuing their studies in higher education and are accepted in the second year of study, similar to mid-level specialists.

In this regard, students enrolled in the applied bachelor's degree program in the TVET system did not see the possibility of further study in higher education (dead-end learning paths). This is fraught with subsequent frustration and problems with sustainable integration in the labor market.

In addition, it is possible that the providers of applied bachelor programs do not conduct informational work effectively enough because the main channel for disseminating information about applied bachelor programs is informal connections such as family, friends, and acquaintances.

There is also an aspect related to the indirect indicator of graduates' satisfaction with applied bachelor's programs. Perhaps applied bachelor programs do not sufficiently meet the expectations of the labor market, which leads graduates to the idea that they made the wrong choice of training programs; perhaps the problem is the low status of some working professions in Kazakhstan. This issue requires a more in-depth study and analysis of applied bachelor's degree programs and the overall situation of working professionals in the country.

Conclusion

As mentioned previously, there is a significant shortage of skilled engineers, technicians, and mid-level managers in the production sector. Despite the increasing number of facilities being constructed in the country, the lack of technical specialists necessitates the recruitment of foreign labor (Seilkhanov, 2022). To mitigate this issue and reduce dependence on foreign workers, we propose the following strategies to enhance the applied bachelor's degree program in Kazakhstan, considering the current nascent state of this program:

Ministry of Science and Higher Education of the Republic of Kazakhstan: To raise public awareness, it is necessary to systematically collect, analyze and disseminate information on applied bachelor's degrees, including information on the average earnings of graduates and employment rates. A thorough research is also needed to assess the relevance of the educational programs offered by higher education institutions to the actual needs of the labor market.

Ministry of Labor and Social Protection of Population of the Republic of Kazakhstan: To conduct longitudinal studies that track graduates' progress and professional development over time. It is necessary to investigate the employment of graduates of applied bachelor programs and their career development, employment and salary levels.

Industry associations and the National Chamber of Entrepreneurs "Atameken": Employer participation in the design and delivery of applied bachelor's degree programs should be encouraged at all stages, from program development to graduate employment.

Educational institutions: Implementation of a flexible lifelong learning approach: Embracing a flexible educational approach that encourages individuals to acquire skills through

lifelong learning modules. This concept promotes the idea of continuous skill accumulation throughout one's career, enabling individuals to adapt to evolving industrial demands.

Interdepartmental Collaboration for NQF Enhancement: The synchronization phase should focus on building bridges between the short-cycle programs of 5th level and the 6th level NQF to allow for transition and higher degrees in the future. Collaboration of key stakeholders within an interdepartmental working group is crucial to update the NQF to align with international standards as the European Qualifications Framework. Such alignment, especially at level 5 NQF, will facilitate the recognition and comparability of qualifications, strengthening the credibility and value of applied bachelor's degrees in the labor market.

Overall, the successful implementation of these proposed solutions can alleviate the shortage of skilled professionals in Kazakhstan production sector, reduce reliance on foreign labor, and fostering a self-sustaining workforce that meets the industry's demands.

Funding information

This research has been funded by the Committee of Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No. BR18574103 To increase the competitiveness of universities in Kazakhstan through the reengineering of the national system of quality assurance of higher education).

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

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DOI:10.59787/2413-5488-2024-48-4-126-134

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THE IMPACT OF ARTIFICIAL INTELLIGENCE ON ENGLISH LANGUAGE TEACHING IN THE CONTEXT OF FORMAL AND INFORMAL HIGHER EDUCATION

Abstract: This article considers the impact of artificial intelligence on the process of teaching English in formal and informal higher education. The authors study the use of various artificial intelligence technologies, such as machine learning, neural networks and automated speech analysis systems, to improve the effectiveness of teaching English to students, analyze the advantages and disadvantages of using artificial intelligence in teaching English, and offer recommendations for optimizing this process. The authors presented research of the influence of artificial intelligence on the process of teaching English through a theoretical review of foreign experience and a questionnaire survey, the purpose of which was to study the opinions and views of students on the influence of artificial intelligence on the process of teaching English. The results of the research may be useful for teachers and students planning to introduce artificial intelligence into English language teaching.

Keywords: artificial intelligence, formal and informal higher education, the process of teaching English, questionnaire survey, data analysis.

Introduction

In recent years, artificial intelligence (AI) has played an increasingly important role and is becoming more widespread and influential in various areas of our lives. One of the areas where artificial intelligence can have a significant impact is English language teaching, especially in the context of formal and informal higher education. Historically, learning foreign languages can be quite a challenging process which require a lot of time and effort. However, thanks to artificial intelligence new opportunities emerge for improving and making the process of teaching English more effective, since in the process of using artificial intelligence, the basic principles of the communicative approach are implemented: communication, situationality, functionality, co-study of language and culture, authenticity, dialogue of cultures.

In formal higher education, artificial intelligence can be used to create adaptive learning programs that can personalize teaching material according to the individual needs and knowledge level of students. By analyzing data from the learning process, artificial intelligence can identify student weaknesses and suggest additional materials or exercises to improve them. This helps students study more effectively and achieve better results.

In addition, artificial intelligence can also be used to develop automatic student assessment systems. Such systems can analyze written work and oral answers of students, evaluate their grammar, vocabulary, punctuation and other aspects. This allows teachers to more objectively evaluate students and provide them with feedback, which contributes to their further development and improvement.

In informal higher education, such as online courses and English learning apps, artificial intelligence can play a huge role in improving the user experience. For example, AI-based speech recognition systems can correct students' pronunciation errors. This is especially useful for learning English, where correct pronunciation is one of the key aspects. Moreover, artificial

intelligence can offer personalized recommendations for studying material based on an analysis of each student's preferences and achievements.

One of the main capabilities that artificial intelligence provides is access to a huge database with various language materials. This allows each student to choose individually the most suitable and convenient way of learning English. Thanks to artificial intelligence, one can get access to various online courses, training materials, video lessons and tests. All this information can be structured and presented in a convenient and understandable form, which significantly simplifies and accelerates the learning process.

Literature review

The integration of artificial intelligence into education, and specifically language learning, has gained increasing attention over the past two decades. Researchers have explored the various ways AI can enhance the learning experience by providing personalized, adaptive, and interactive environments. In the literature review, we examined the key contributions of AI to English language teaching, focusing on personalized learning, feedback mechanisms, AI-based assessments, and the role of AI in informal education settings.

One of the most significant contributions of AI to education is the ability to personalize learning experiences. In their seminal work on AI, Russell and Norvig (2016), emphasize that AI systems can adapt to individual learning needs by analyzing a student's progress and adjusting the difficulty level and type of content presented. In language learning, this can mean tailoring vocabulary exercises, grammar lessons, or even pronunciation drills based on a learner's proficiency level.

The study of Li and Zhao (2018) explore this further, noting that AI-driven applications like Duolingo and Babbel use machine learning algorithms to track learners' performance and suggest areas for improvement. This kind of adaptability enables learners to work at their own pace, which is particularly beneficial in language learning where individual differences in acquisition speed are common. The ability of AI systems to provide instant feedback based on individual performance makes it a powerful tool in addressing diverse learner needs.

Real-time feedback is crucial in language learning, as it allows learners to correct mistakes and refine their skills immediately. Traditional classroom settings may not always allow for timely or individualized feedback, but AI systems bridge this gap. Chapelle (2001) discusses the role of computer-assisted language learning (CALL) systems in providing instant feedback, particularly in grammar and writing exercises. AI-based systems can analyze a learner's written text for grammatical errors, syntax issues, and vocabulary use, providing corrections and explanations in real time.

Moreover, AI's ability to provide speech analysis has been transformative. Systems like Google's speech recognition or Apple's Siri can evaluate pronunciation accuracy, offering learners immediate feedback on their spoken English. This capability is vital for learners in informal settings who may lack access to native speakers or qualified instructors. Reinders and White (2016) highlight how AI-driven pronunciation tools like these help non-native speakers improve their phonetic accuracy through constant practice and feedback.

Automated assessment systems powered by AI provide an objective way to evaluate language proficiency. Traditional assessments, such as written exams and oral interviews, often suffer from subjectivity and inconsistencies. AI systems, on the other hand, can assess students' performance in a more standardized and objective manner. Warschauer and Healey (1998) were among the first to recognize the potential of AI in language testing, particularly in automating grading for written compositions. Today, AI tools can evaluate not just grammar and vocabulary but also more complex linguistic elements like coherence, argument structure, and overall fluency.

In addition, adaptive testing is becoming a powerful AI-driven feature in language learning platforms. Such tests adjust their difficulty based on the learner's performance in real time, offering a more accurate measure of a learner's true ability. Brown (2007) noted that adaptive testing provides more reliable results than traditional static tests because it responds to each learner's proficiency level dynamically, making the process more efficient and reducing learner frustration.

AI's role in informal education settings, such as online platforms and language learning apps, is growing rapidly. Many learners now turn to AI-based tools outside traditional classrooms to practice English. Reinders and Wattana (2014) examined the use of AI in digital games and simulations, finding that such environments encourage language interaction in a low-pressure setting, increasing learners' willingness to communicate in English. These games, often powered by AI, provide immediate feedback and adapt to the learner's skill level, creating an engaging and effective learning experience.

Applications like Duolingo, Memrise, and Rosetta Stone offer AI-driven lessons that adapt to users' progress and learning preferences. These tools make use of gamification to motivate learners, making the process of language acquisition enjoyable and accessible. Lee (2013) points out that these platforms use corpus-based analysis and natural language processing (NLP) to generate exercises that are contextually relevant, which is key in helping learners apply language skills in real-world situations.

While the literature highlights many benefits, it also points out limitations in the use of AI for language learning. One of the major concerns is the lack of human interaction. Tleuzhanova et al. (2019) emphasize that while AI provides valuable support in terms of personalization and feedback, it cannot replace the human elements of teaching, such as empathy, encouragement, and cultural understanding. Language learning is not just a cognitive process but also a social one, and human interaction plays a crucial role in building communicative competence.

Another limitation is the risk of over-reliance on AI tools, which can hinder learners from developing critical thinking and problem-solving skills. Warschauer and Healey (1998) warn against using AI as a one-size-fits-all solution, arguing that while AI can automate certain aspects of learning, it is essential to combine it with human-led instruction to achieve the best results.

The existing body of research demonstrates the transformative potential of AI in English language teaching, particularly through personalized learning, automated feedback, and assessment. AI's role in both formal and informal education settings is growing, with more students and teachers leveraging these technologies to enhance language acquisition. However, the limitations of AI, particularly its inability to replace human interaction and the risk of over-reliance, must be considered when integrating AI into the learning process. Future research should explore the balance between AI and traditional teaching methods to ensure that learners receive a holistic education experience.

Methodology

This study employs a mixed-methods approach to investigate the impact of artificial intelligence on English language teaching within both formal and informal higher education contexts. A survey was administered to 150 students from two universities, using a Likert scale to assess the frequency of AI use, perceived effectiveness, and advantages/disadvantages of AI tools. Open-ended survey questions and semi-structured interviews were conducted to gain deeper insights into students' experiences with AI in English learning. The interviews included questions on how AI tools impacted their learning experience, highlighting areas such as feedback quality and personalized learning. The quantitative analysis involved descriptive statistics to summarize survey data, while thematic analysis was used for the qualitative

responses. This approach allowed for an exploration of both general trends and specific experiences with AI.

Data collection involved a comprehensive survey administered to students across various institutions, aiming to capture diverse perspectives on AI tools and their integration into language curricula. The survey included quantitative metrics regarding the frequency and effectiveness of AI applications, alongside qualitative open-ended questions to gather nuanced insights into user experiences and pedagogical transformations. The study's findings aim to inform best practices and guidelines for effectively integrating AI technologies in the teaching of English, catering to the evolving needs of both instructors and learners in an increasingly digital academic landscape.

Results and discussion

Modern technological developments and breakthroughs in the field of artificial intelligence directly relate to everyday life and education. English language teaching, in particular, is not the exception. The rapid development of artificial intelligence and its implementation in educational processes no longer seems impossible. They represent enormous potential for creating effective and innovative methods of teaching English.

During our research, we conducted a questionnaire survey among students of Karaganda Buketov University and Abylkas Saginov Karaganda Technical University, which helped to identify how artificial intelligence affects the learning process. 150 students took part in the survey, 67.3% were first-year students, 4% were second-year students, 28% were third-year students and 0.7% were fourth-year students. This sample was chosen to represent a broad cross-section of students within formal education settings. The majority of participants were first-year students, which reflects the current trend of increased technology use among younger learners. The inclusion of students from different years also provided insights into how AI adoption varies with experience. This range was deemed sufficient to explore diverse attitudes and usage patterns of AI in English learning.

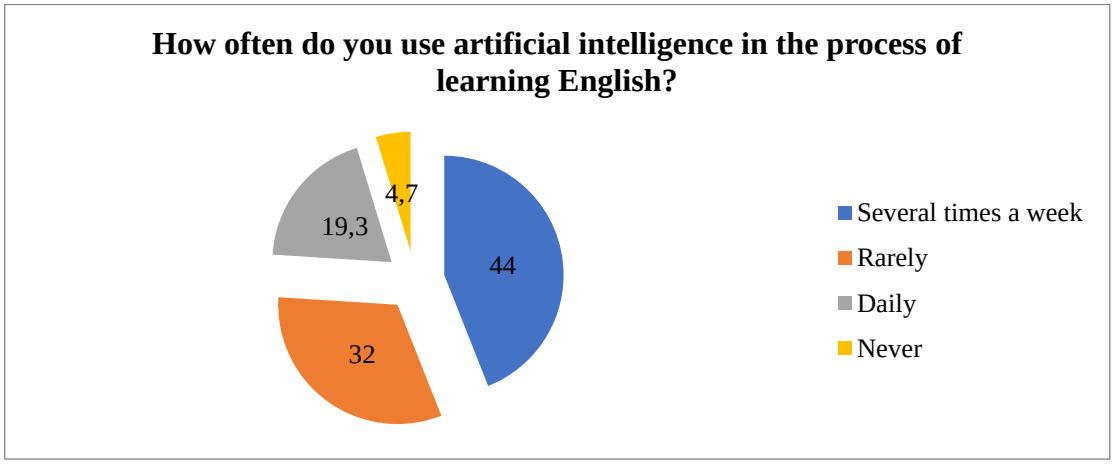
The research has several limitations:

The sample was restricted to two institutions, limiting the generalizability of the results to a broader population. The data are based on self-reported responses, which may not accurately reflect actual usage or effectiveness of AI tools. Although the study includes informal settings, the majority of the sample comes from formal education environments, potentially skewing the results toward traditional educational perspectives.

The purpose of this questionnaire was to study the opinions and views of students on the impact of artificial intelligence on the process of teaching English. In addition, the survey showed which technologies and applications using artificial intelligence students use to learn English, and what advantages and disadvantages they see in using such technologies.

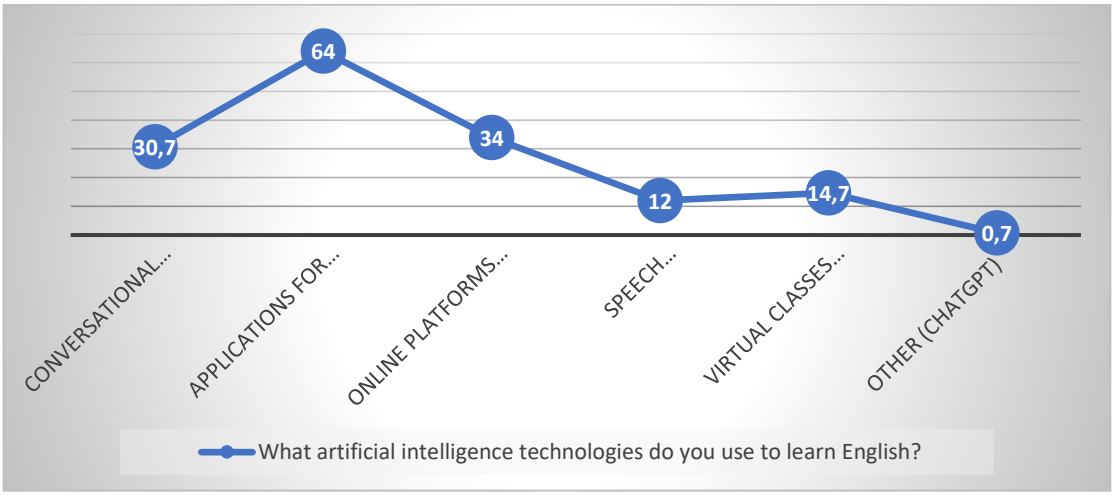
On the question "How often do you use artificial intelligence in the process of learning English?" slightly less than half of respondents (44.6%) answered that they use artificial intelligence in the process of learning English several times a week, 32.4% of respondents answered that they rarely use AI in the process of learning English, 18% of respondents answered that they daily use AI in the process of learning English, the remaining 5% responded that they never use AI in the process of learning English. The low rate of use of artificial intelligence in English language learning may be caused by several factors, such as a lack of available educational resources, limited awareness of AI technologies, or simply a preference for traditional teaching methods.

Figure 1
"How often do you use artificial intelligence in the process of learning English?"



Regarding the question "What artificial intelligence technologies do you use to learn English?" respondents most often indicated the following answers: conversational robots/assistants (for example, Siri or Alexa) – 46 (30.7%), applications for mobile devices – 96 (64%), online platforms and courses – 51 (34%), speech recognition technologies – 18 (12%), virtual classes and lessons – 22 (14.7%). In addition, some students noted that they use ChatGPT to learn English.

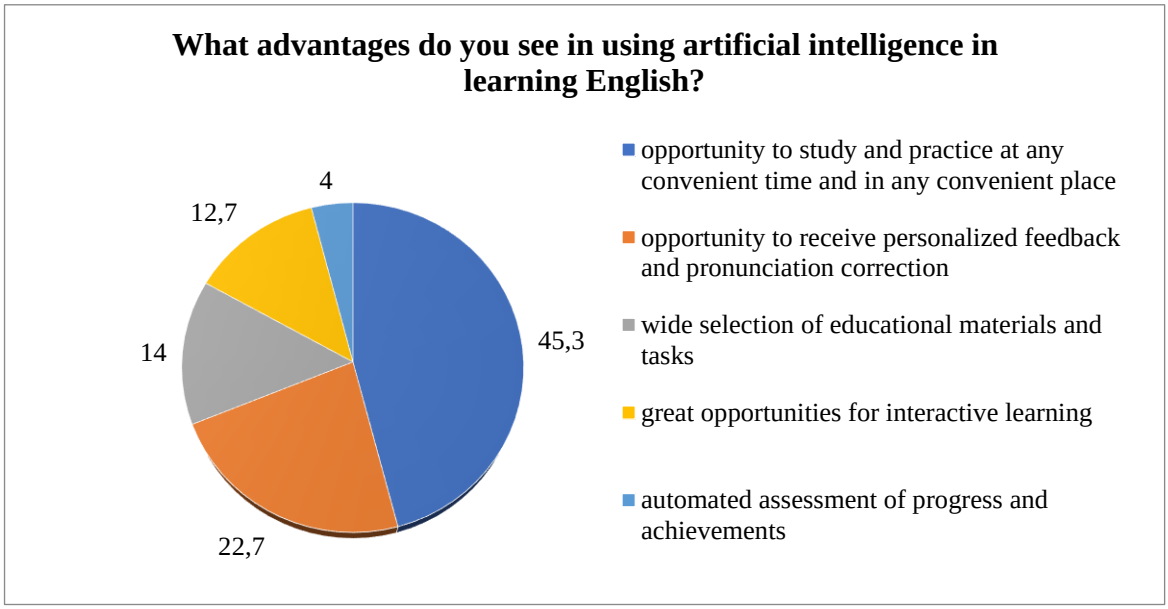
Figure 2
"What artificial intelligence technologies do you use to learn English?"



For the question "What advantages do you see in using artificial intelligence in learning English?" slightly less than half of the respondents (45.3%) answered that they considered as the main advantage the opportunity to study and practice at any convenient time and in any convenient place, 22.7% of respondents answered that the main advantage is the opportunity to receive personalized feedback and pronunciation correction, 14% of respondents believe that a wide selection of educational materials and tasks is an advantage in the use of artificial intelligence in learning English, 12.7% responded that the advantage is great opportunities for interactive learning, the remainder of respondents (4%) consider automated assessment of progress and achievements as an advantage in using artificial intelligence in learning English.

Figure 3

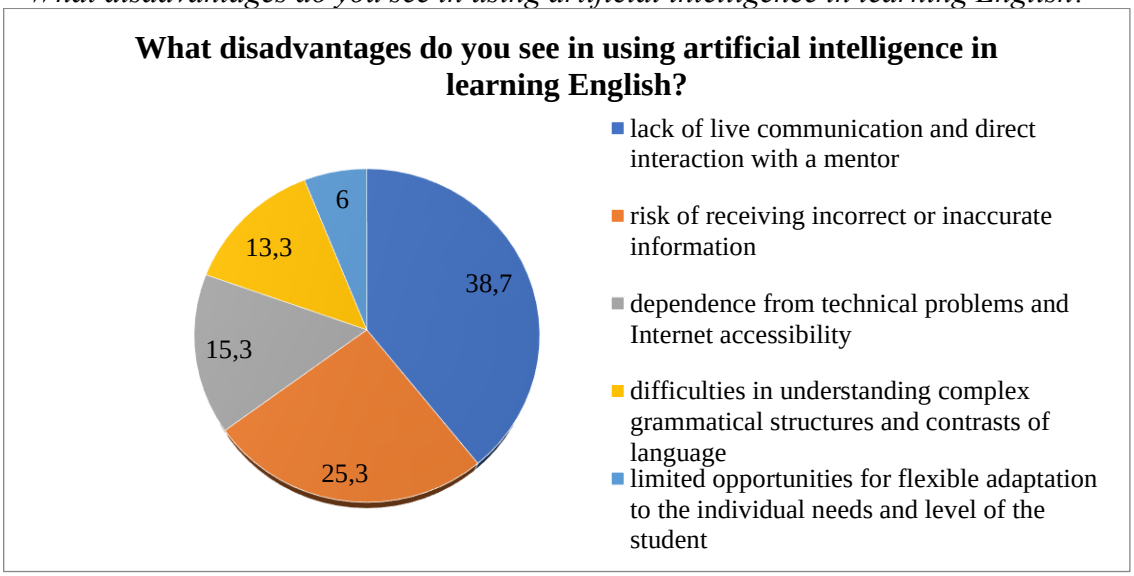
"What advantages do you see in using artificial intelligence in learning English?"



Regarding the question "What disadvantages do you see in using artificial intelligence in learning English?" 38.7% of respondents answered that the main disadvantage is the lack of live communication and direct interaction with a mentor, 25.3% consider the risk of receiving incorrect or inaccurate information as a disadvantage in using artificial intelligence in learning English, 15.3% of respondents answered that dependence from technical problems and Internet accessibility is a disadvantage in using artificial intelligence in learning English, 13.3% of respondents believe that difficulties in understanding complex grammatical structures and contrasts of language are a disadvantage in using artificial intelligence in learning English, the remaining 6% believe that that limited opportunities for flexible adaptation to the individual needs and level of the student are a disadvantage in the use of artificial intelligence.

Figure 4

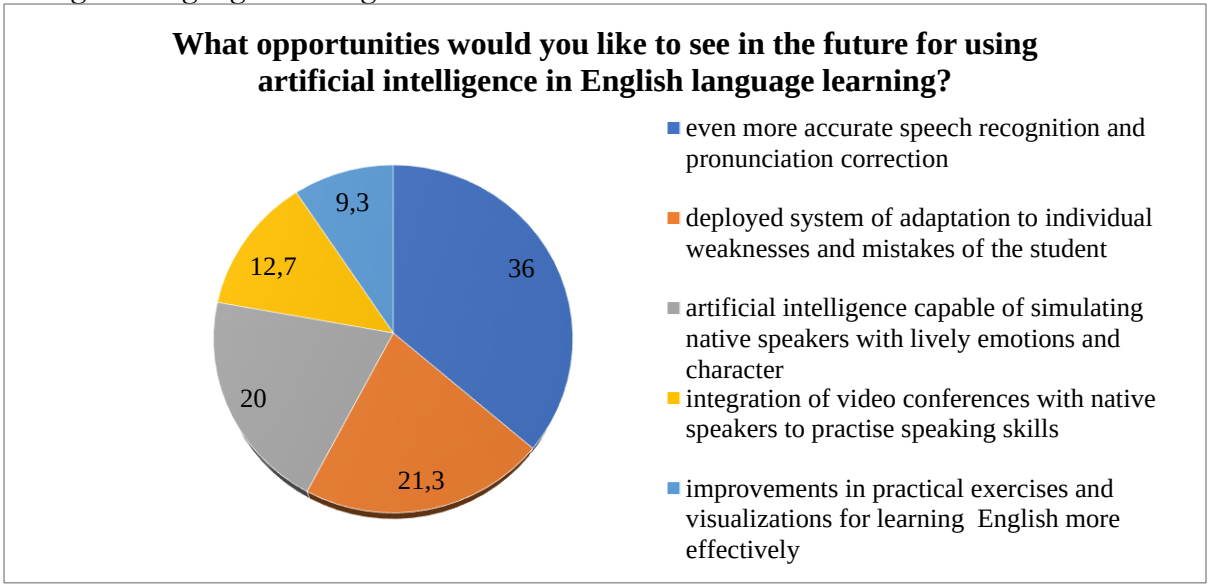
"What disadvantages do you see in using artificial intelligence in learning English?"



For the question "What opportunities would you like to see in the future for using artificial intelligence in English language learning?" 36% of respondents answered that they would like to see in the future even more accurate speech recognition and pronunciation correction for the use of artificial intelligence in learning English, 21.3% of respondents would like to see in the future a deployed system of adaptation to individual weaknesses and mistakes of the student as an opportunity for using artificial intelligence in learning English, 20% of respondents would like to have an opportunity to use artificial intelligence capable of simulating native speakers with lively emotions and character in the process of learning English, 12.7% would like to have an opportunity to integrate video conferences with native speakers to practise speaking skills in the process of learning English, the remaining 9.3% of respondents would like to see in the future improvements in practical exercises and visualizations for learning English more effectively.

Figure 5

"What opportunities would you like to see in the future for using artificial intelligence in English language learning?"



The survey also asked respondents to answer the question, "If you could improve one aspect of the use of artificial intelligence in English language learning, what would it be?" The following suggestions were made by the respondents: Simulation of pronunciation and practice of English with a native speaker; a unique curriculum, taking into account the student's level of knowledge and learning rate; individualization of learning, namely the development of systems that analyze the strengths and weaknesses of each student more accurately and offer adapted lessons and assignments that correspond to their level and learning style.

Conclusion

A survey conducted among English language learners helps understand the impact of artificial intelligence on the teaching process. The survey results reflect the emotional and practical attitude of students towards the use of artificial intelligence in learning English. Most respondents expressed their belief that artificial intelligence has significant potential to improve the efficiency and intensity of learning.

Artificial intelligence could solve a number of problems that students face in the process of learning English. For example, artificial intelligence can provide personalized recommendations and feedback to each student based on their individual weaknesses and

needs. Moreover, artificial intelligence can be connected to online platforms that will allow students to access quality educational materials as well as conduct various types of assessments on their knowledge and skills [9].

However, despite all the advantages, some students have also expressed concerns about the impact of artificial intelligence on English language learning. They are worried that the use of artificial intelligence could replace teacher and reduce the quality of education. The emergence of such concerns indicates the need to balance between the role of artificial intelligence and the presence of the teacher in the educational process.

Overall, the survey results indicate the potential of artificial intelligence in English language teaching. Obtained data shows that the majority of students welcome the idea of using artificial intelligence to improve and optimize their learning process. However, despite this positive feedback it is important to find the right balance to ensure that artificial intelligence becomes a support for teachers and not a replacement. As a result, the survey is an important step towards better understanding artificial intelligence and its impact on English language teaching.

Thus, artificial intelligence has a significant impact on English language teaching making it more accessible, effective and individual. It provides wide access to materials and resources, helps to improve comprehension, speaking, writing and reading skills. Thanks to artificial intelligence, the learning process becomes more interactive, based on the individual needs of each student and allows to achieve the better results. Up to the present, artificial intelligence continues to evolve and its impact on English language teaching will only increase, opening new horizons for everyone who wants to acquire this important international language.

The article was prepared within the framework of the scientific project No. AP19678268 “Scientific-methodological foundations of the professional foreign language training implementation in the conditions of convergence of formal and non-formal higher education” under the grant financing of the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan.

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

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DOI:10.59787/2413-5488-2024-48-4-135-147

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THE JEAN MONNET PROJECT RESEARCH ON DIGITAL CULTURE AND EDUCATION: THE ANALYSIS OF CATEGORIES IN STUDENT RESPONSES

Abstract: This paper presents one of the results of the project on "Digital culture in higher education: European perspective" funded by European Comission Jean Monnet Module (JMM) for the years of 2022-2025. The aim of this funded project is to convey European perspectives on digital culture in higher education. Within this project the authors have developped and introduced a breif module designed for students majoring in information technologies at Astana IT University in Kazakhstan. The authors have conducted an online survey among 452 students who have participated in the module. The purpose of this survey was to explore student persepctives and awarness about digital culture and digitalization in education. The data obtained from the student responses have been clustered into sixteen categories. The authors conclude that the respondents are aware of digital culture and education and opportunities in these fields. The student responses demonstrate multifaceted nature of digital culture and digitalization in education. Key themes include the use of digital tools in academic and professional life, digital interaction, and the societal impact of technology. Student responses also emphasized the democratization and accessibility of education through digital platforms. The findings of the study have revealed that there is still lack of familiarity among the respondents with the concept of digital culture and digitalization in education and a synchronous impact on society and culture.

Keywords: digital culture; digitalization in education; Jean Monnet Module; Astana IT University; categories.

Introduction

JM module and AITU

The Jean Monnet program, initiated by the European Commission in 1989, has been dedicated to fostering excellence in teaching and research in the field of EU studies for over three decades. This initiative has undertaken numerous activities aimed at deepening the understanding of European integration, promoting EU values, and supporting academic institutions worldwide. Through its various modules, chairs, and centers of excellence, the program has attracted students, teachers, researchers and policymakers that are interested in search for fundings for in EU-related studies.

One such project is "Digital Culture in Higher Education: European Perspective (further - DigCEE)", the Jean Monnet Module, which has been developed by the Department of General Education Disciplines at Astana IT University (AITU) in Kazakhstan. The undergoing idea of this module is that students specializing in IT fields, who primarily develop hard skills, should also gain an understanding of how digitalization in the domains of culture and education are evolving in the EU and what initiatives are undertaken by the EU to advance its society in the digital sphere. The project underscores the importance of integrating soft skills with technical expertise, helping students develop general and professional knowledge and meet the demands of the modern workforce, thus providing an opportunity to the students to be more competitive in the national and international labor markets.

It could be assumed that Kazakhstani university courses might not typically include EU-related content. This module by incorporating EU perspectives in digital strategies and their

implications aims at expanding student knowledge, fostering the student global outlook. The four objectives are set within the module: 1) to foster the introduction of a European angle into the curricula; 2) to raise interest in the EU and create the basis for future roles of European knowledge; 3) to deliver a tailor-made course related to the issues of developing digital culture; and 4) to foster the publication and dissemination of the project outcomes.

The target groups include 1) students on the undergraduate and graduate levels majoring in Media Technologies, Digital Journalism, IT Management, IT Entrepreneurship, Soft Engineering, and Cyber Security; 2) teachers and educators in IT fields; and 3) young researchers and other interested specialists from Kazakhstani universities.

The DigCEE Jean Monnet Module deliverables cover various activities, including seminars, workshops, and roundtables. One of the main activities is the development of a tailor-made course, along with conducting research. At the stage of the course development, the project team synthesized and analyzed EU policies and studies by EU researchers in the field of digitalization to ensure that the course content is relevant and aligned with current EU advancements. Additionally, the team had consultations with experts-researchers from EU universities on best practices and approaches in digital education.

The course offered in the framework of the DigCEE Jean Monnet Module, explores digital culture and its influence on communication in academic and professional contexts. It emphasizes research and existing policy in relation to digital culture and education development from the European perspective. The course includes such topics as 1) The concept of Digital Culture in EU studies, 2) European Digital strategy: Overview of EU actions, 3) EU policy on digital skills and digital education, 4) European Union and Digital Cultural Diversity, and 5) Digital Intercultural Communication

At the stage of project planning, it was necessary to determine the number of participants who could benefit from the module. The project team expected that on average approximately 50 students from various educational programs would enroll for the course. Beyond expectations, in the first year of project implementation, 230 students, primarily majoring in Information Technologies, Software Engineering, and Media Technologies joined the course. The course has been conducted in an interactive way on-campus, through extensive discussions, project work and collaborative activities.

To enhance the efficacy of the course, the research aims at exploring student understanding of digital culture and its effects on learning and education. The following research questions are central to the empirical part:

RQ 1: What is the extent of JMM students' familiarity with the concept of digital culture?

RQ 2: What are the categories of JMM student responses regarding their perceptions of digital culture and its impact on learning and education?

Literature review

In today's world, digital technologies impact all aspects of our lives, they are present everywhere and modify our way of living. According to Gere (2002), the prevalence of digital technologies points out the existence of digital culture. The researcher observes that "digitality can be thought of as a marker of culture because it encompasses both the artefacts and the systems of signification and communication that most clearly demarcate our contemporary way of life from others" (Gere, 2020, p. 12).

Culture, communication and information are closely related concepts. According to Merriam-Webster Dictionary, culture can be defined as "the integrated pattern of human knowledge, belief, and behavior that depends upon the capacity for learning and transmitting knowledge to succeeding generations" and as "the customary beliefs, social forms and material traits of a racial, religious, or social group". The difference between these two definitions is that the first one reflects the idea of how knowledge is transmitted, whereas the second one

underlines the influence of norms and values on people's behaviour and interpersonal relationships. In the light of the latter understanding of culture, Foresta et al. observe that knowledge influences traditional beliefs, attitudes and perceptions, and the extent of this influence depends on forms of communication and its content (Foresta et al., 1995).

Uzelac (2010) states that a widely accepted view on information and communication is that of data and data transmission, however, these are also social phenomena. In this regard, Hamelink (2003) overlaps a broad understanding of communication as a mere transmission of messages and refers it to "a process of sharing, making common, or creating a community" (p.155). According to the researcher, a set of cultural products constitute information content, and information becomes integrated into the cultural fabric of a society. The words communication and information imply the essence of human relationships, in which sharing knowledge and respecting others' cultural identity are significant aspects (Pasquali, 2003). Being a sign system for communication, culture lays the basis for individuals to build their own worldview through sharing common cultural codes and meanings. In this line, Foresta et al. (1995) observe "culture is a memory, collective memory, dependent on communication for its creation, extension, evolution and preservation" (p. 19). The above-mentioned aspects are important for understanding the phenomenon of digital culture, which relates to sharing information, communicating and interacting in the digital environment.

The concept of digital culture was introduced into research in the early 2000s by T. O'Reilly. The researcher related it to Web 2.0, "a world where users generate and distribute content, often with freedom to share, create, use and reuse." (Creeber& Martin, 2009, p.19). In modern research, digital culture is primarily considered from two perspectives – technological and humanitarian. The technological perspective relies on the idea that all elements of digital culture operate through digital devices, whereas the humanitarian perspective highlights that digital culture, and its continuous evolution bring forth personal and societal transformations (Guk & Veselovskaya, 2017; Chernykh & Parshikov, 2016).

Over the past decade, there has been a significant shift in education from merely integrating technology into the classroom to fostering a holistic digital culture that enhances student learning experiences (Fischer et al., 2020).).

Digital culture is a complex socio-technical process that prepares students to effectively function and operate in a digital society (Ufimtseva & Ivanenko, 2019). It shapes the ways in which students interact with information and each other and influences their learning experiences and outcomes (Sari et al, 2020). Maslakova (2020) highlights that digital culture is a part of an individual's general culture which serves as an informational worldview. Klochko and Prokopenko (2023) focuses on digital culture as a part of digital competence, highlighting the importance of the safety of all the parties involved in the digital educational process, as well as the content and means of education.

In this regard, researchers and educators explore the concept of digital culture in education. Thus, Yelubai et al. (2020) conducted a survey among 97 students to identify perceptions of digital culture, digital society, and digital technology and their impact on students' future professional career. The results from the study revealed that the majority of participants relate digital culture merely to the ability to use a computer and the ability to find necessary online information. Khader (2024) investigated the effects of digital culture on students in terms of personal and academic perspectives. The participants of this study acknowledged that developing digital culture made them more open to the world, expanded their knowledge base, and enhanced their critical thinking skills. Galchenko et al. (2022) conducted an experimental study to evaluate student satisfaction with the integration of digital culture into academic programs. A particular emphasis was placed on seminars, conferences, and business simulations which were organized to assess and analyze students' professional behavior in the digital environment.

Developing students' digital culture not only enhances their technical skills but also fosters critical thinking, adaptability, and collaborative abilities in a digital environment (Elubay & Dzhusubalieva, 2019). By accessing and processing educational information with digital tools and platforms, students learn to contribute to a digital environment, thus becoming more proficient in digital literacy and communication (Haleem et al., 2022).

As technology continues to evolve, the incorporation of technological advancements into educational process has become increasingly important to prepare students for the demands and needs of a modern, digitalized world. As observed by Triantafyllou, "technologies are tools related to cognition that seem helpful for learners in their effort to identify the critical thinking they start to develop and transform it into learning progress" (Triantafyllou, 2024, p.2). Consequently, the development of digital culture is essential to cultivate students who have strong knowledge and competence in utilizing digital technologies effectively. From this perspective, it becomes necessary to explore how students understand digital culture and digitalization of education which might help in developing effective educational curricula and teaching materials and creating a holistic educational environment.

Methodology

Method: This was a non-experimental study based on a survey. The aim of the study was to explore the perceptions of the university students toward digital culture and its effects on learning and education. The specific objectives were a) to identify the level of students' familiarity with the term 'digital culture' and to determine any difference by different educational programs; b) to analyze students' responses through categorization.

A mixed-method approach was used, combining both quantitative and qualitative techniques.

Descriptive statistics were used to identify students' familiarity with the concept of digital culture. Contingency analysis and Chi-Square test were employed to explore the relationship between students' educational programs and their familiarity with the term 'digital culture' and to determine the statistical significance of this association.

Thematic and content analysis were used to analyze open-ended responses. This helped identify common patterns in the participants' understanding of digital culture and its effects on education.

The selected methods helped get an understanding of both the frequency of certain perceptions (quantitative) and the depth of students' views (qualitative).

Participants: In this research, a convenience sampling method was employed. The population was made up of students who participated in Jean Monnet Module activities. These activities were not limited only to course lectures and practical classes, but also covered seminars, workshops and roundtables. Participation was voluntary, with no specific inclusion or exclusion criteria applied beyond participation in the module activities.

Overall, the sample consisted of 452 students of IT-related educational programs (Table 1). Their age ranged from 17 to 20 years.

Table 1
Survey Participants

Educational program	Number of Participants
IT Entrepreneurship	28
IT Management	89
Information Technologies	15
Media Technologies	71
Computer Science	71
Software Engineering	77
Cyber Security	96
Smart Technologies	5
N=452	

Compiled by the authors based on the data collected.

Instrument: This research employed a questionnaire, consisting of two sections: 1) a section on participant's demographic information, and 2) a section with questions related to digital culture and digitalization of education. The second section consisted of 7 questions, including one close-ended, one Likert scale, and five open-ended questions. It was decided not to overload the questionnaire with items and ask respondents primarily key open-ended questions which could help to get insights into students' views. To establish reliability, the questionnaire was pre-tested on a pilot group of students (n=30) to ensure that all the items were clear and comprehensible.

Procedure: The data collected were analyzed in two stages. Quantitative data analysis (descriptive statistics, contingency analysis, Chi-square tests) was conducted using SPSS v.29 software. Qualitative responses were analyzed manually through thematic coding. Initial codes were generated from the raw data, the similar codes were then grouped into categories. These categories were further analyzed to identify the recurrent themes in students' perceptions of digital culture and its role in education.

Results

First, survey participants were asked whether they were familiar with the term *digital culture* (Tables 2 and 3). The responses revealed that a significant majority, 62% (281 participants), had heard of the term. In contrast, 10.8% (49 participants) indicated they had not heard of it, and 27% (122 participants) were unsure. Thus, a substantial portion of the participants are aware of digital culture; however, there is still a considerable number who lack familiarity or certainty about the term.

Table 2
Are you familiar with the term digital culture?

	Frequency	Percentage
Yes	281	62
No	49	10,8
Not sure	122	27

Compiled by the authors based on the data collected.

To trace the difference in familiarity with the term by educational program, contingency analysis was conducted, and Chi-Square was calculated (Tables 3 and 4).

Table 3

Familiarity with the term by Educational Program

Educational program		Yes	No	Not sure	Total
IT Entrepreneurship	Frequency	10	6	12	28
	Row%	35.7	21.4	42.9	100
	Column%	3.6	12.2	9.8	6.2
	Total%	2.2	1.3	2.7	6.2
IT Management	Frequency	65	8	16	89
	Row%	73	9	18	100
	Column%	23.1	16.3	13.1	19.7
	Total%	14.4	1.8	3.5	19.7
Information Technologies	Frequency	9	1	5	15
	Row%	60	6.7	33.3	100
	Column%	3.2	2.0	4.1	3.3
	Total%	2.0	.2	1.1	3.3
Media Technologies	Frequency	29	6	36	71
	Row%	40.8	8.5	50.7	100
	Column%	10.3	12.2	29.5	15.7
	Total%	6.4	1.3	8.0	15.7
Computer Science	Frequency	38	11	22	71
	Row%	53.5	15.5	31.0	100
	Column%	13.5	22.4	18.0	15.7
	Total%	8.4	2.4	4.9	15.7
Software Engineering	Frequency	56	6	15	77
	Row%	72.7	7.8	19.5	100
	Column%	19.9	12.2	12.3	17.0
	Total%	12.4	1.3	3.3	17.0
Cyber Security	Frequency	70	10	16	96
	Row%	72.9	10.4	16.7	100
	Column%	24.9	20.4	13.1	21.2
	Total%	15.5	2.2	3.5	21.2
Smart Technologies	Frequency	4	1	0	5
	Row%	80.0	20	0	100
	Column%	1.4	2	0	1.1
	Total%	.9	.2	0	1.1

Compiled by the authors based on the data collected.

The analysis reveals that familiarity with the term *digital culture* varies by different educational programs. Students of IT Management, Software Engineering, and Cyber Security educational programs demonstrate a higher level of familiarity, whereas students of Media Technologies and IT Entrepreneurship programs show higher levels of uncertainty.

Table 4

Chi-Square Tests

	Value	df	Asymptotic Sig. (2-tailed)
Pearson Chi-Square	48.07	14	.000
Continuity Correction	47.38	14	.000
Linear by linear association	6.53	1	.011
N of valid cases	452		

Compiled by the authors based on the data collected.

The Chi-Square test results further validate these findings. The Pearson Chi-Square test produced a value of 48.07 (df=14, Asymptotic Sig.=.000). This indicates a statistically significant association between familiarity with the term under consideration and the participants' educational programs. The p-value of 0.000 is less than 0.05, confirming the rejection of the null hypothesis that assumes no association.

To determine what digital culture means to students, they were asked to briefly describe this concept. The results revealed various perspectives, which have been categorized and distributed into 16 thematic groups (Table 5).

Table 5

Categories of digital culture and their frequency

Thematic categories of responses	**Examples of responses**	**Frequency**	**Percentage**
The use of digital technologies in academic and professional spheres	A workplace shaped and influenced by digital tools and technologies. Workplace with ICT Workplace which is influenced by digital technologies	88	17.69
Digital interaction and communication	Interactions between technology and human Community where people can exchange information by using technologies Technologies and digitalization affect our interactions as humans	74	14.86
Influence of technology on culture and society	Presence of technology, and its impact on society, such as communication, work, education. Culture that is represented in a digital form	63	12.67
Digitalization and the use of modern technologies in everyday life	Use and integration of digital technologies in our everyday lives New technologies capture everything around us and become part of our everyday life	52	10.45
Social media and online communities	Digital culture encompasses various aspects, including online communities, social media platforms It is culture that we have in social media	41	8.24
Digital privacy, digital security	Proper storage of data Observance of digital privacy	32	6.43
Digital art, media, and cultural expression	Media that we use to express ourselves Paintings, music and overall art on internet platform	32	6.43
Knowledge and competence in digital technologies	Knowledge of how to use modern technologies Understanding and ability to use technology	31	6.23
Digital tools and equipment	How things like computers and internet change our culture Ability to use digital tools and equipment It's era of computers, with no paper, everything is online	29	5.83
Digital norms of behaviour, digital ethics	Behaviour in internet space. Combining rules of behaviour and values with digital technologies. Rules of conduct on the Internet The ethics on the online platforms	27	5.42
Culture in digital environment	A kind of modern culture It is something with IT and culture	25	5.02

Technological impact on identity and relationship	Relationship between technology and society, shaping our identities, relationships, and modes of expression in the digital age	25	5.02
Digital performance and events	It's all about digital performances which can unite people. Examples can be the digital competitions, concerts and art exhibitions	19	3.82
Simplification and improvement of life with technology	Use of digital technologies for a comfortable life The opportunity to simplify and improve the quality of life with the help of technology	17	3.42
Digital transformation and future	Future, upgraded and modern Future innovation	17	3.42
Technological development of education	Nowadays educational system Efficient use of technology in education	16	3.22
Compiled by the authors based on the data collected. *Note: The table displays students' original responses and may contain inaccuracies or variations that have not been adjusted by the research team.*			

One of the key themes distinguished was the use of digital tools and technologies in academic and professional life (F=88). The next theme is that of digital interaction and communication (F=74), which emphasizes the influence of technology on societal norms and personal relationships. Another prominent theme was the impact of technology on culture and society (F=63), which may indicate that students are aware of broader societal shifts that emerge due to digitalization and modern technologies (F=52). Online communities and social media were also frequently mentioned (F=41), followed by such important aspects of online communication as privacy, security, and freedom of expression (F=32). Other prominent categories include knowledge and competence in digital technologies (F=31), digital tools and equipment (F=29), and digital norms of behaviour (F=27), which indicate the importance of digital literacy and digital ethics. Smaller yet significant categories are culture in digital environment (F=25) and technological impact on identity and relationship (F=25), demonstrating that students recognize the influence of technologies on the cultural sphere and personal identities. Less prominent but relevant categories include digital performance and events (F=19), simplification and improvement of life with technology (F=17), digital transformation and future (F=17), and technological development of education (F=16).

The responses to the Likert scale question, measuring students' perspectives on the extent digital culture and technology affected higher education, revealed that there is a moderate overall perception of the influence of digital technologies (mean=3.40, SD=0.71). This finding is supported by a majority of students, as 228 respondents (50.44%) believe that digital culture and technology affect higher education "a lot," while 189 students (41.81%) perceive a moderate impact. A smaller proportion of 23 students (5.09%) feel the impact is slight, and only 12 students (2.65%) believe there is no impact at all.

Open-ended questions helped to get more detailed insights into students' perspectives on digital culture and its effects of learning and education. Participants' responses were analyzed and distributed into separate thematic categories. Table 6 provides a breakdown of the perceived effects of digital culture and technology on learning and education, categorized into 9 key themes.

Table 6

Effects of digital culture and technology on learning and education: categories and their frequency

Thematic categories of responses	Examples of responses	Frequency	Percentage
Democratization and accessibility	the democratization of access to information and educational resources. Digital technology has made it possible for people to access educational materials, courses, and resources that were previously limited to a select few.	204	27.6
Learning opportunities	students develop and expand knowledge through technology students are able to find any information, communicate, and develop their research skills with the help of internet. Also, taking notes is much easier through technologies such as computers, phones, etc.	124	16.8
Online platforms	there are a lot of online learning platforms, and they are available for everyone. They help to do online conferences, do some tests, and search for more information.	97	13.1
Flexibility	convenience in learning if we have online lectures on some platforms we can watch them any time, while offline lectures cannot be recorded.	78	10.5
Technological integration into education	it helps to significantly save time.	67	9.1
Personalized learning and student-centered education	Allow you to use a wider range of forms and methods of learning It is easier to find information based on your needs Teachers can give tasks corresponding to the level of learning and thus improve the quality of education.	64	8.6
Knowledge and information access	60% of knowledge came from the free internet resources technology made education easier to teach, have access to knowledge	17	2.3
Interactive teaching	It helps to increase the effectiveness of practical tasks Technology makes classes and the learning process more interactive	16	2.2
Collaboration (on the global level)	exchanging knowledge, experience between different countries connections between students and tutors are established in a better way	11	1.5

Compiled by the authors based on the data collected.
Note: The table displays students' original responses and may contain inaccuracies or variations that have not been adjusted by the research team.

Democratization and accessibility emerge as the most frequently mentioned theme, with 204 responses (27.6%). This highlights the significant role of digital technologies in providing broader access to education and making learning more inclusive. Learning opportunities follow closely behind with 124 responses (16.8%), underscoring that digital platforms have broadened educational opportunities through online courses, resources, and tools. Online platforms, with 97 responses (13.1%), and flexibility, with 78 responses (10.5%), emphasize the convenience

digital technologies bring to education, including self-paced learning, remote access to courses and learning materials through various online tools. Technological integration into education, with 67 responses (9.1%), highlights the incorporation of AI and virtual simulations to engage learners and enhance their academic achievements. Personalized learning and student-centered education, accounting for 64 responses (8.6%), reflect that digital technologies help to tailor curricula and educational content to meet individual needs of students. Interactive teaching (2.2%) and knowledge and information access (2.3%) emphasize the importance of interactive methods and the ease of accessing information through digital platforms. Lastly, collaboration on the global level, mentioned by 11 participants (1.5%), indicates the role digital technologies play in knowledge exchange with international peers.

Discussion and conclusion

The findings of this study demonstrate students' positive attitudes towards digital culture and the digitalization of education. The data obtained are consistent with the results of surveys among university students in various countries (Andrew et al, 2018; Alam et al. 2023; Novikova & Bychkova, 2022).

The significant majority of participants are familiar with the concept of digital culture and recognize its importance in higher education. However, the familiarity with the term and its essence varies across different IT-related educational programs. This variation suggests a need for further study to understand underlying reasons, including an analysis of curricula and educational content.

The data reveals that students strongly believe that digital culture and technology have a profound impact on learning and education. Students highlighted access to education and learning resources via digital platforms and online tools as a key advantage. This finding aligns with the study by Huda (2024) who observed that access to digital platforms helps shape the digital environment, thus, contributing to online knowledge acquisition. Flexibility and convenience offered by digital technologies, such as remote learning and self-paced courses, are highly valued by students. Students also highlight that the integration of technology into education supports personalized learning and makes classes more interactive, motivating and engaging. This observation aligns with research by Dema and Moeller (2012), who state that the use of powerful digital tools allows students to meaningfully interact with data, solve open-ended problems, build their own understanding of facts and phenomena, thus, promoting a rich and engaging learning environment. In a study by Warren (2016), the use of student-centered technology enabled greater student participation and engagement through exploration of the educational material in creative ways.

Additionally, the findings indicate that students believe digital culture facilitates collaboration on a global level, provides democratized access to education, and enhances learning opportunities through online platforms. These observations are consistent with earlier research. A qualitative study by Nurdiana et al. (2023) found that successful partnerships positively impact students' learning performance, facilitate broader access to resources, and foster collaborative learning environment.

In conclusion, the findings of this study indicate that students are aware of the digital culture and opportunities it offers. Students' responses for open-ended questions allowed for distinguishing sixteen different thematic categories, which demonstrate multifaceted nature of digital culture. A big number of thematic groups describing digital culture from students' perspectives may be explained by the fact that students participating in the survey majored in IT-related educational programs, who directly deal with digital technologies. Future research might want to explore the perspectives of students of non-IT-related majors. However, the findings of this study revealed that there is still a considerable number of students who lack familiarity with the concept of digital culture or have somewhat vague understanding of it. This

may suggest a need for further elaboration of the curriculum with more profound topics and the development of the educational content.

 **Co-funded by the European Union**

This paper is a product of work that has been conducted in the framework of the Jean Monnet Module Digital Culture in Higher Education: European Perspective, project no. 101085153. The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflects the views only of the authors.

Conflict of Interest Statement

The authors declare no potential conflicts of interest regarding the research, authorship, or publication of this article.

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