

1. General information

1.1. Curriculum title	Educational Research	
1.2. Curriculum developing team	Leading University/Pedagogical Developer	Member Universities
	Kazakh National Women's Teacher Training University	Dulati Taraz Regional University
		Amanzholov East Kazakhstan State University
		Sh. Ualikhanov Kokshetau University
		K. Zhubanov Aktobe Regional University
		Kozybayev North Kazakhstan University
		Pavlodar Pedagogical University
1.3. Type of curriculum (in accordance with the National Qualifications Framework)	MASTER'S DEGREE Level 7	
1.4. Total academic credits	120 academic credits	
1.5. Study mode	full-time, blended-learning	
1.6. Expected program duration	2 years	
1.7. Short curriculum description Curriculum goals and objectives	This Educational Programme (EP) " <i>Educational Research</i> " is a Master level national teacher education curriculum, which has been designed in collaboration by various Kazakh universities and with international consulting. Due to the nature of a national curriculum, the descriptive texts within the curriculum do not provide	

specific information but highlight general pedagogical principles and cross-cutting themes (see also Annex 1.). The more detailed descriptions of e.g. methodologies and assessment will be identified in the implementation plans of the universities, considering also institutional and regional specific conditions.

Educational programme (EP) "*Educational Research*" is a Master level programme for teachers and other professional who wish to specialize in educational research in various levels of education. EP consists of a pedagogical component, a subject component, and a research component including Final Attestation/Master Dissertation.

The EP consists of 6 modules: "General education", "Educational research design", "Research methods", "Research ethics and integrity", "Communication and dissemination of research", "Research work of a Master student", including Final Attestation/Master Dissertation.

The EP is aimed at training highly qualified specialists who are able to work at the junction of many fields related to education – psychology, sociology, etc. After mastering this EP, the graduates are able to carry out educational research, applying rational research approaches in accordance with various contexts and using ethically sustainable procedures to create new values. The graduates are also able to use research procedures as a tool for the development of educational practices. The EP follows the philosophy of Action research striving for transformative change through a simultaneous process of taking action and conducting research that are linked to each other by critical thinking.

1.8 Main principles of the curriculum

Competence-based initial teacher training(ITE)

The competence of the teacher combines the competence in the area of pedagogy and its subject area with the theoretical and practical competence of teaching in various working conditions. The teacher has the knowledge and skills necessary for his subject area, and thus is able to teach and monitor young people and adults studying in the same subject.

Teacher competence focuses on planning, leadership, teaching, and evaluation. For this reason, the teacher must have sufficient theoretical knowledge in the field of teaching and competence development. In addition, in modern working life, special attention is paid to cooperation and networking, skills development, as well as support and maintenance of the well-being of oneself and one's surroundings.

The competence of a teacher is influenced by changes in the labor market, in educational structures and in society as a whole, and all these elements emphasize the dynamic nature of the teacher's work. The work, characterized by constant changes in a variety of working conditions, focuses on the teacher's ability to evaluate and adjust their own activities. Self-assessment skills are an important part of the development of professional identity. The teacher constantly makes value decisions, which means that considering issues of professional ethics is one of the necessary professional skills. Change requires the development of experience, the ability to learn, and the ability to reform and update the way things are done within the community.

Curriculum of pedagogical education based on competencies

Thus, the curriculum of pedagogical education, based on competencies, consists of three structures: 1) Pedagogical studies, 2) Subject-specific research, 3) Mandatory research. Each of these structures includes modules and corresponding courses. The results of the training courses describe the competencies required for teaching, and are placed in the NQS system (National Qualifications System) at the seventh basic level.

The curriculum is based on the following basic principles:

- Competence-based learning
- Constructive coordination
- Student-centered learning and active learning methods
- Competence-based research
- Interdisciplinary training
- Inclusive education
- Professional development of teachers and change management

(for more information, see in the Attachment)

2. Programme rationale

In the context of the Education Modernization Project funded by the World Bank, several universities providing pre-service teacher education have designed and revised in international collaboration thirty (30) pre-service teacher education

curricula according to the principles of competence-based education that ensure a holistic development of Master students' competences. Moreover, the student-centered approach better prepares Master students to teaching profession by providing practical examples, experiments and experiences, which Master students can transfer to their classroom practices considering better the versatile needs and wellbeing of their students.

In order to match the requirements of the renewed primary and secondary education, teachers' professional competences need to be re-evaluated and completed. The new approaches in secondary education need to be reflected in pre-service teacher education and the Master students' profiles. Furthermore, these thirty (30) revised or new pre-service teacher education curricula have been designed to better improve Master students' various generic competences that are essential in teacher's profession. Several important and cross-cutting pedagogical principles that Kazakhstan education system aims to develop, such as inclusiveness and interdisciplinarity, have been taken into consideration in the design and implementation of the curricula. In addition, these curricula emphasize the development of Master students' research skills in a way that they become practitioners who are constantly reflecting and evaluating their own practices and the practices of their schools to develop their own work and their work community, and the whole sector of education.

3. Teacher's professional competences

Teachers' professional competencies are defined as consisting of **pedagogical competencies and subject competencies, as well as general competencies.**

3.1. Pedagogical component: Areas of competence/Learning Outcomes

- **Competence area for scientific thinking**
Master students are able to apply the necessary research methods to solve problems arising during research activities. Master students are able to analyze the possibilities of modern theory and practice. Master students are able to organize research and conduct scientific and pedagogical activities in their profession.
- **Competence area for communication**
Master students are able to communicate orally and in writing in a foreign language in interpersonal and intercultural interaction. Master students are able to apply the acquired language and intercultural communication skills in professional activities.
- **Competence area for pedagogy and management psychology**

Master students are able to carry out critical analysis of problematic pedagogical and professional situations and identify areas for further development in higher education pedagogy. Master students are able to organize, implement, adjust, and predict the development areas of the learning environment and process in educational organizations. Master students are able to apply the optimal leadership style in their profession to motivate their students and colleagues considering the psychological characteristics of an individual. Master students are also able to manage group and interpersonal processes, as well as their own behavior and the behavior of others during pedagogical activity. Master students are able to use the modern methodologies as teachers in designing content and forms of the learning process, in developing educational and methodological materials, as well as in selecting and applying interactive methods of teaching.

3.2. Subject component: Areas of competence/ Learning Outcomes

- **Competence area for pedagogical Action research**
Master students create, research and disseminate various educational practices. Master students know the methodology of research in action, understand and are able to apply various research methods (qualitative and quantitative) depending on the objectives of the study, its context and other conditions and make decisions depending on the results of the study. Master students maintain their curiosity and constantly improve their knowledge and skills in the field of scientific research.
- **Competence area for the consciousness and preservation of sustainable ethical values**
Master students carry out research in accordance with the principles of sustainable ethics, aimed at preserving and improving the well-being of the target audience, creating new values, ensuring and continuously improving a comfortable and safe educational environment. Master students protect their ethical rights and strictly adhere to ethical principles while identifying themselves as ethical, following the rules of the researchers.
- **Competence area for the application of a diverse context and educational environment**
Master students have the skills to disseminate their research and integrate it into life, are able to assess their impact, reflect on their own work, have cultural intelligence (understanding and sincere respect for our differences) and an increased perceptual ability to detect cultural nuances and skillfully respond to the diversity of others.

3.3. Research component: Areas of competence/ Learning Outcomes

- **Competence area for research**

Master students are able to plan the structure and procedure of research and carry out research, analysis, systematization of results, as well as draw conclusions and argue them. Master students are able to proficiently prepare scientific reports, publications, and presentations, and share and utilize them in their professional activities.

4. Programme structure and learning outcomes

Teachers' professional competencies are defined as consisting of **pedagogical competencies and subject competencies, as well as general competencies**. Thus, the curriculum consists of three components: 1) Mandatory component (basic disciplines), 2) Pedagogical component, and 3) Subject component. The areas of competence and competencies were defined separately for each component (see 3.).

Component	Courses
Pedagogical component (university component)	<ol style="list-style-type: none"> 1. History and philosophy of science 2. Foreign language 3. Pedagogy of higher education 4. Psychology of management 5. Pedagogical practice
Subject component (university and optional component)	<ol style="list-style-type: none"> 1. Introduction to Empirical Research in Education 2. Research design, data collection and analysis 3. Change management 4. Project management 5. Qualitative research methods and data collection 6. Quantitative research methods and statistical analysis 7. In-depth study of qualitative analysis methods 8. Advanced study of quantitative methods of analysis 9. Action research 10. Research-based decision-making 11. Education policy 12. Ethics of educational research 13. Research integrity

	14.Social and ethical aspects of diversity and uniqueness 15.Interaction of the research, social and educational environment 16.Oral and written dissemination of research results
Research component (university and optional component)	1. Literature review and collection of empirical data 2. Research practice 3. Research work of a Master student 4. Final attestation (Master Dissertation)

4.1. Structure of the programme		
Code	Module name and main disciplines	Academic credits
GES-Ms	GENERAL EDUCATION	20
	University Component	20
GES-Ms 701	History and philosophy of science	4
GES-Ms 702	Foreign language	4
GES-Ms 703	Pedagogy of higher education	4
GES-Ms 704	Psychology of management	4
GES-Ms 705	Pedagogical practice	4
ERD-Ms	EDUCATIONAL RESEARCH DESIGN	15
	University Component	10
ERD-Ms 706	Introduction to Empirical Research in Education	5
ERD-Ms 707	Research design, data collection and analysis	5
	Optional Component	5
ERD-Ms 1008/1	Change management	5
ERD-Ms 1008/2	Project management	
RSM-Ms	RESEARCH METHODS	25
	University Component	15
RSM-Ms 801	Qualitative research methods and data collection	5
RSM-Ms 802	Quantitative research methods and statistical analysis	5

RSM- Ms 903	Action research	5
	Optional Component	10
RSM- Ms 904/1	In-depth study of qualitative analysis methods	5
RSM- Ms 904/2	Advanced study of quantitative methods of analysis	
RSM- Ms 905/1	Research-based decision-making	5
RSM- Ms 905/2	Education policy	
REI-Ms	RESEARCH ETHICS AND INTEGRITY	15
	University Component	15
REI-Ms 701	Ethics of educational research	5
REI-Ms 802	Research integrity	5
REI-Ms 903	Social and ethical aspects of diversity and uniqueness	5
CDR-Ms	COMMUNICATION AND DISSEMINATION OF RESEARCH	10
	University Component	10
CDR-Ms 801	Interaction of the research, social and educational environment	5
CDR-Ms 902	Oral and written dissemination of research results	5
RW-Ms	RESEARCH WORK OF A MASTER STUDENT	27
	University Component	27
RW-Ms 801	Literature review and collection of empirical data	3
RW-Ms 1002	Research practice	4
RW-Ms 8910	Research work of a Master student	20
FinEx	FINAL ATTESTATION	8
	Total academic credits	120

General Education 20 academic credits

During the module, Master students develop their competencies in research, communication, and management for the effective implementation of their pedagogical professional activities.

Course title	History and philosophy of science
Component	Mandatory component, University component
Module	General Education 20 academic credits
Cycle	Core disciplines

Academic credits	4
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for scientific thinking • Competence area for pedagogy and management psychology <p>During the course, Master students examine the history of science from the origin to the modern stage of post-neoclassical science, the evolution and basic concepts of modern philosophy of science, as well as philosophical problems of the main subsystems of science. Master students form a culture of scientific thinking and develop their analytical abilities and research skills.</p>
Learning outcomes	<p>Master students who demonstrate competence can:</p> <ul style="list-style-type: none"> • apply necessary research methods to solve problems arising in the course of research activities; • analyze and comprehend the realities of modern theory and practice; • organize research, and scientific and pedagogical activities.

Course title	Foreign language (professional)
Component	Pedagogical component, University component
Module	General Education 20 academic credits
Cycle	Core disciplines
Academic credits	4
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for communication • Competence area for pedagogy and management psychology <p>During the course, Master students develop their spoken language skills in professional foreign language allowing them to implement various aspects of the professional activities in foreign language as teachers.</p>
Learning outcomes	<p>Master students who demonstrate competence can:</p> <ul style="list-style-type: none"> • apply spoken foreign language to solve the challenges of interpersonal and intercultural interaction;

	<ul style="list-style-type: none"> • apply the acquired knowledge, formed foreign language skills and skills of intercultural communication in professional and pedagogical activities.
--	--

Course title	Pedagogy of higher education
Component	Pedagogical component, University component
Module	General Education 20 academic credits
Cycle	Core disciplines
Academic credits	4
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for communication • Competence area for pedagogy and management psychology <p>During the course, Master students develop their general cultural and professional competencies. They also establish their conscious professional position on modern issues of the development of pedagogical science and higher education. Master students develop their psychological, pedagogical and methodological abilities as a teacher of a higher educational institution to solve current pedagogical challenges and tasks in higher education.</p>
Learning outcomes	<p>Master students who demonstrate competence can:</p> <ul style="list-style-type: none"> • critically analyze the current state of pedagogical science and practices, and the challenges of their development in higher education; • carry out their teaching activities considering the current trends in the development of higher education; • organize, implement, adjust, and predict the development of the educational environment and the educational process in higher education.

Course title	Psychology of management
Component	Pedagogical component, University component
Module	General Education 20 academic credits
Cycle	Core disciplines
Academic credits	4

Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for scientific thinking • Competence area for communication • Competence area for pedagogy and management psychology <p>During the course, Master students get familiarized with modern concepts of the role and multidimensional aspects of management psychology in practice. They improve their own psychological culture and management skills for the successful implementation of professional activities and self-improvement.</p>
Learning outcomes	<p>Master students who demonstrate competence can:</p> <ul style="list-style-type: none"> • apply the optimal leadership style and methods of motivation considering the psychological characteristics of the individual; • manage group and interpersonal processes, and their own behavior as well as the behavior of others in pedagogical activity.

Course title	Pedagogical practice
Component	Mandatory component, University component
Module	General Education 20 academic credits
Cycle	Core disciplines
Academic credits	4
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for scientific thinking • Competence area for communication • Competence area for pedagogy and management psychology <p>The purpose of pedagogical practice is to ensure the relationship between the theoretical knowledge and practical activities of Master students to apply them into real educational process. During the pedagogical practice, Master students develop their practical skills of teaching and learning methods by conducting undergraduate classes at the discretion of the university.</p>

Learning outcomes	<p>Master students who demonstrate competence can:</p> <ul style="list-style-type: none"> • organize, implement, adjust, and predict the development of the educational environment and the educational process in educational organizations; • design the content and forms of educational work, develop educational and methodological material, as well as select and apply modern interactive forms and methods of teaching.
-------------------	---

Educational research design 15 academic credits

During the module, Master students are introduced with various types of research, epistemological and ontological basis for building knowledge. Master students improve their skills in research design and learn various techniques and methods of collecting and processing data to be used in research in the field of social sciences.

Course title	Introduction to Empirical Research in Education
Component	Subject component, University component
Module	Educational research design 15 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research • Competence area for the application of a diverse context and educational environment <p>The aim of the course is that Master students understand the research process in terms of qualitative, quantitative and mixed methods of research. They build their understanding and realize the possibilities of applying empirical research in education through the development of research competencies, including the collection and analysis of information. Master students formalize research results not only in the form of generalized conclusions, but also graphically through graphs, tables, diagrams, etc.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • understand the classification and application possibilities of empirical research; • identify methodological apparatus from scientific publications and analyze it;

	<ul style="list-style-type: none"> • build hypotheses and research questions for relevant empirical research (including their own research) and describe the methods for their practical implementation (by the end of the semester, Master students complete a scientific and methodological proposal for their dissertation).
--	--

Course title	Research design, data collection and analysis
Component	Subject component, University component
Module	Educational research design 15 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research <p>Master students study the methodology of scientific research design and practical implementation of these methods, expanding the knowledge about the use of various methods of data collection and analysis. Master students also study the international and national standards for the design of research through end-to-end work in groups at seminars. They are introduced to the basics of research data management, including the protection and lifecycle of research data.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • understand the structure of scientific research; • analyze the design and methods of research; • formulate the design and research methods of a simple empirical study; • apply the skills of collaboration and teamwork on the development of research design; • complete the proposal or scientific and methodological apparatus of their dissertation

Course title	Change management
Component	Subject component, Optional component
Module	Educational research design 15 academic credits
Cycle	Major disciplines
Academic credits	5

Course Description/competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research • Competence area for the application of a diverse context and educational environment <p>This course is recommended for Master students who are more interested in organizing and leading groups of people and communities. Master students build their understanding of the methods and ways in which the educational organization analyzes, describes and implements changes both within its internal and external processes using, among other things, empirical research methods. This includes training and supporting employees, setting the necessary steps for changes, and monitoring actions before and after changes to ensure successful innovation.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • assess and formulate the need for changes in the context of education from the perspective of various stakeholders; • develop missions, vision in the form of program documents of the organization of education of the appropriate level; • apply knowledge on human resource management at basic level, and improve the motivation of the involved parties towards a common goal; • control the process and form a vision of the end result of the changes.
Course title	Project management
Component	Subject component, Optional component
Module	Educational research design 15 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research • Competence area for the application of a diverse context and educational environment

	The elective course is designed for Master students who want to learn how to manage any projects, i.e. events that have a clear timeframe and budget. In pedagogical and scientific activities, this knowledge is necessary in the context of research projects. Master students acquire knowledge and skills about tools and techniques when performing project activities to achieve project requirements and planned results.
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • develop small projects related to research or changes in the educational environment; • develop project management procedures using a methodology; • analyze a project from the point of view of the project manager and from the standpoint of risk management.

Research methods 25 academic credits

During the module, Master students further expand their understanding of research methods and their application. Master students have the possibility for narrow profiling between qualitative or quantitative research methods. During the module, Master students are provided with a large amount of practice and the learning outcomes are parts of a larger study (for the most part, but not necessarily a Final Attestation/Master Dissertation). The disciplines of the module are designed in a way that after a general familiarization with quantitative and qualitative methods of analysis Master students can focus on one of these areas of research. At the same time, the use of mixed methods of research is supported.

Course title	Qualitative research and data collection methods
Component	Subject component, University component
Module	Research methods 25 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research <p>Master students expand their knowledge of various qualitative methods for data collection. The paradigm shift to qualitative research methods is understood as the need to describe phenomena, which is more consistent with the practice of an inclusive school. Master students learn to analyze the</p>

	specifics of thematic research, phenomenological research, ethnography as a research method, etc. In the practical works of this course, Master students apply their theoretical knowledge through the practice of descriptions, observations, interviews, NVIVO tools, etc.
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • justify the chosen qualitative methods for conducting research; • focus on the possibilities and limitations of qualitative methods; • observe the ethics of qualitative research; • conduct content analysis in various contexts; • organize interviews and group/categorize responses; • find and apply digital tools for collecting and processing data.

Course title	Quantitative research methods and statistical analysis
Component	Subject component, University component
Module	Research methods 25 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research • Competence area for the consciousness and preservation of sustainable ethical values <p>Master students study quantitative methods of analysis. Evidence as a criterion for the use of quantitative methods allows us to substantiate hypotheses and look for their confirmation /refutation. During the course, Master students build their understanding of the significance of the parameters of quantitative methods: reliability, validity, and correctness. They also explore various sampling and data collection methods applicable in the context of quantitative research. During practical training, Master students develop their skills in putting forward null and alternative hypotheses, statistical hypotheses and forecasts, as well as checking them and forming conclusions. They study modern measurement theories: response and generalizability. The practical</p>

	application of the demo version of statprograms determines the orientation in them.
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • oriented in quantitative research methods; • understand the structure of statistical analysis; • put forward null, alternative and statistical hypotheses; • select statistical criteria for working with hypotheses; • understand the mathematical meaning of criteria calculations; • use Excel, SPSS (Statistical) to conduct research; • evidently describe and interpret the obtained statistical data.
Course title	Action research
Component	Subject component, University component
Module	Research methods 25 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research • Competence area for the consciousness and preservation of sustainable ethical values <p>Master students, as future practitioners, acquire skills for self-reflective research undertaken in social situations to improve the rationality and fairness of their own practices. Master students build their understanding of the basics in the field of social engineering and social management. Master students improve their competences in collaborative action research and conducting research on educational programs of different levels, exploring their teaching practice, and getting acquainted with the basics of pedagogical design.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • identify the problem needed for research and improvement through the Action research approach; • reflect on their work as teachers and their own development not only as a professional, but also as a lifelong learner; • design a cyclical process of action and reflection to improve their own practices;

	<ul style="list-style-type: none"> • apply the information and results from scientific research into their work; • analyze and apply strategies to verify the effectiveness of pedagogical work.
Course title	In-depth study of qualitative research methods and data collection
Component	Subject component, Optional component
Module	Research methods 25 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research • Competence area for the consciousness and preservation of sustainable ethical values <p>Master students deepen their knowledge of one or more qualitative methods for data collection. They also build their understanding of the specifics of a qualitative method by learning research tools in detail. Master students investigate in detail the mechanisms and features of data analysis in qualitative research, the intersection with quantitative methods of analysis, and as a result they identify, select and describe a mixed method with an emphasis on qualitative methods. During the practical work, Master students learn the practice of designing, implementing the method(s), describing the results and digital support for collecting and, in particular, analyzing data.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • explain the differences and complementarity of qualitative and quantitative methods; • substantiate the choice of the method for conducting the study; • guide by the possibilities of method and limitations; • observe the ethics of qualitative research; • build a research, conduct an analysis, and submit data.
Course title	Advanced study of quantitative research methods and statistical analysis
Component	Subject component, Optional component

Module	Research methods 25 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research • Competence area for the consciousness and preservation of sustainable ethical values <p>Master students study in depth a group of quantitative methods (nonparametric criteria, parametric criteria, cluster, factor analysis, etc.) based on constructive coordination. Evidence as a criterion for the use of quantitative methods allows to substantiate hypotheses and look for the confirmation/ refutation Master students investigate in detail the mechanisms and features of data analysis in quantitative research, the intersection with qualitative methods of analysis, and as a result they identify, select and describe a mixed method with an emphasis on quantitative methods. During practical training, they develop their skills in putting forward null and alternative hypotheses, statistical hypotheses and forecasts, as well as checking them and forming conclusions. The practical application of the demo version of statprograms determines the orientation in them.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • master a group of quantitative methods of research and analysis of the information received; • understand the structure of statistical analysis method(s); • put forward null, alternative and statistical hypotheses for this method(s); • select statistical criteria for working with hypotheses; • understand the mathematical meaning of criteria calculations and interpret the data obtained; • use Excel, SPSS (statistical) to conduct research; • evidently describe and interpret the obtained statistical data.
Course title	Research-based decision-making
Component	Subject component, Optional component
Module	Research methods 25 academic credits

Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research • Competence area for the consciousness and preservation of sustainable ethical values <p>During the course, Master students study the basic concepts of action research and some aspects of risk management. They build their understanding of the relationship between research and decision-making described being as an inevitable and secure process of validity. Master students also learn that contextual coordination based on research results is a necessary stage of scientific discussion for decision-making. They learn about the decision-making structure described through stages, functions, and dynamics.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • understand decision-making in their practice as a process based on scientific knowledge; • reflect on the pedagogical challenge from the point of view of the manager; • analyze how social and emotional functioning affects the perception of the world and decision-making; • explain the relationship and sequence of research and decision-making; • carry out contextual coordination of the solution based on the study.

Course title	Education policy
Component	Subject component, Optional component
Module	Research methods 25 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research • Competence area for the consciousness and preservation of sustainable ethical values

	Master students build their understanding of the educational policies through the types of existing classifications of normative legal acts and the types of future classifications of standards, guidelines, and practices. They learn to consider the process of creating educational policies and their structure, as well as analyze the changes that have led to the introduction of various policies.
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • interpret and draw conclusions on the content of educational policy; • find and analyze critical information about education policy; • form a request for the development of educational policy; • participate in the development and implementation of education policy; • use relevant monitoring concepts to measure educational policy; • build relationships with educational policy actors for contextual coordination and decision making.

Research ethics and integrity 15 academic credits

The module is value-oriented and while studying, Master students become more familiar with the legal and regulatory framework for research and the applicability of codes of ethics. They can themselves advise schools and undergraduate students on the ethical component of research. They also deepen their knowledge of anti-corruption culture, and the rules for protecting intellectual property. They practice social interaction by using communication formats suitable for certain contexts and communities. The disciplines of the module lay a solid foundation and nurture Master students' ethics in research as a sustainable value that does not lose relevance throughout life.

Course title	Ethics of educational research
Component	Mandatory component, University component
Module	Research ethics and integrity 15 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	The purpose of this course is to improve the following areas of pedagogical competence:

	<ul style="list-style-type: none"> • Competence area for the consciousness and preservation of sustainable ethical values • Competence area for the application of a diverse context and educational environment <p>Master students become aware of the value of ethics in education and social research as a guiding principle of conducting research that does not harm or endanger those who participate in them. Master students learn to evaluate their research and the research of their colleagues from an ethical point of view, make recommendations, and analyze the safety conditions of the research participants. Master students analyze how ethical aspects are integrated into the process of designing pedagogical research. They develop documentation for ethics committees as an applicant and as a member of the committee, and ensure the security, anonymity and integrity of research data.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • explain the Kazakhstan researcher's code in education; • prepare documents for national and international commissions on ethics; • develop ethical scientific research in the field of education; • develop and apply a plan of interaction with various groups and communities, depending on the goals of educational research; • argue the observance of academic integrity with logical and rational conclusions; • conduct ethical research with participants, especially those who are in a vulnerable position during the research process.
Course title	Research integrity
Component	Subject component, University component
Module	Research ethics and integrity 15 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for the consciousness and preservation of sustainable ethical values

	<p>Master students construct their understanding of research integrity as a value based on objectivity, honesty, openness, fairness, accountability, and management rationality. They research, discuss, and reflect on the use of honest and verifiable methods in research of any scale. They also conduct and evaluate the research, report on the results with special attention to compliance with rules, regulations, and guidelines following generally accepted professional codes or norms.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • evaluate the thoroughness and accuracy of the selection of the research tool; • analyze the use of professional codes and rules in scientific publications; • demonstrate expertise in academic integrity and analyze and provide feedback to improve research integrity of at least undergraduate students.

Course title	Social - ethical aspects of diversity and uniqueness
Component	Subject component, University component
Module	Research ethics and integrity 15 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for the consciousness and preservation of sustainable ethical values • Competence area for the application of a diverse context and educational environment <p>Master students understand and accept as a value the importance of diversity for the successful and sustainable development of society. They learn about the normative legal acts with the protection of the right of the individual to be and express themselves, and the need to protect the uniqueness and freedom of the individual. They also consider the influence of a teacher on the establishment of a healthy team atmosphere, where everyone feels like a valuable member of society and has an internal motif to implement positive changes and form common values.</p>

Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • know the RLA (UN documents, UNESCO, Constitution of the Republic of Kazakhstan); • apply the phenomena of diversity and uniqueness in the context of globalization in pedagogical work and research; • critically analyze the phenomena of diversity and uniqueness; • recognize themselves as part of an inclusive society being ready to contribute to its development.
-------------------	---

Communication and dissemination of research 10 academic credits

During the module, Master students develop a variety of communication skills, including oral and written communication within the academic community, as well as interaction with external communities. They learn to use some elements of social engineering depending on the context. They also learn to reflect on their research methodology as a critical thinker and to oppose and find arguments for strengthening of their work. Master students also develop the classical rhetoric approaches. The disciplines in the module are selected and designed to improve Master students' communication skills and broaden their understanding of the application of scientific knowledge, as well as for them to explore a large number of communities for which research can potentially have an impact. The more Master students learn about science and raise interest and improvements, the better.

Course title	Interaction of the research, social and educational environment
Component	Subject component, University component
Module	Communication and dissemination of research 10 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for pedagogical Action research • Competence area for the consciousness and preservation of sustainable ethical values • Competence area for the application of a diverse context and educational environment

	Master students study, analyze, and evaluate the ways of interaction between the research and the social and educational environment in the context of the interaction of groups of people, individuals, organizations, and their influence on each other. Master students learn to create new or improve old ways of interaction based on the values of universal well-being.
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • demonstrate advanced understanding of the mechanisms of action of social engineering; • evaluate and analyze the interactions of various groups; • create blueprint to improve interactions; • strengthen narrative research skills.
Course title	Oral and written dissemination of research results
Component	Subject component, University component
Module	Communication and dissemination of research 10 academic credits
Cycle	Major disciplines
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for the consciousness and preservation of sustainable ethical values • Competence area for the application of a diverse context and educational environment <p>Master students formulate their research in a form suitable for dissemination in a professional scientific environment through: the development of academic writing, the rules of preparation for oral presentation, and the study of international standards for the presentation of visual information in articles and in an oral report. Master students also work on their speech, and develop professional vocabulary and oratorical skills.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • use professional dictionary and publish research results in scientific publications that report original conclusions;

	<ul style="list-style-type: none"> • competently summarize (pitch) and comprehensively report on ongoing research; • build justifications clearly and consistently of their work for specialists and non-specialists; • reflect on their own speech and written works, as well as on their colleagues; • critically evaluate their achievements in the field under study and analyze the results of the study.
--	--

Research work of a Master student 27 academic credits

During the module, Master students develop a set of knowledge in a certain field, as well as their research skills. They identify and solve problems based on the nomination and justification of a hypotheses. They formulate theoretical research questions and plan research activities, as well as collect, critically analyze, and interpret the necessary information. They also choose the most optimal research methods, perform an experiment, and present research results. Master students develop their abilities to apply their research knowledge and skills in specific activities. The disciplines of the module rely on the scientific methodologies explored by the Master students in the prior modules. Master students can methodically and progressively collect data for their final attestation work, analyze the data while receiving support from their supervisor and other competent specialists. As a result of the module, by strengthening and expanding previously acquired knowledge and skills, Master students increase their chances of successfully completing and defending the final attestation.

Course title	Literature review and collection of empirical data
Component	Subject component, University component
Module	Research work of a Master student 27 academic credits
Cycle	Major disciplines
Academic credits	3
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of competence:</p> <ul style="list-style-type: none"> • Competence area for research <p>Master students, depending on the requirements, build their understanding of using various citation formats when compiling a list of references and references in the text. They use software to form a personal archive of scientific publications and to apply international standards of citation.</p>

	Master students collect data for their Master's thesis using various methods. They have the possibility to go for an internship to another educational institution around the world and collect and process theoretical and/or practical data.
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • select and analyze the necessary literature on the topic under study; • use cited publications and comply with the intellectual property rules; • systematize the information received from scientific sources and analyze it according to their own research topic; • present a fragment of the study in the defense; • communicate independently the choice of method and form of research; • understand ethical standards and comply with their requirements.

Course title	Research practice
Component	Subject component, University component
Module	Research work of a Master student 27 academic credits
Cycle	Major disciplines
Academic credits	4
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of competence:</p> <ul style="list-style-type: none"> • Competence area for research <p>During the course, Master students holistically understand the research process. They solve problems in new conditions in an interdisciplinary context and cope with the difficulties in changing conditions. Master students collect and process quantitative data. They communicate their knowledge and achievements in their research area to the scientific community as well as to general public. They also build their understanding of the ethics of conducting research.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • understand research process holistically; • collect quantitative and qualitative data, and process it by using various approaches; • present the results of the study; • observe the ethics of research.

Course title	Research work of a Master student
Component	Subject component, University component
Module	Research work of a Master student 27 academic credits
Cycle	Major disciplines
Academic credits	20
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of pedagogical competence:</p> <ul style="list-style-type: none"> • Competence area for research <p>Master students identify themselves as professional researchers. They reflect independently, analyze, and draw conclusions. The Academic Advisor provides them with comprehensive support in the formation of their researcher personality, and assistance in creating the design of the study.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • describe the hypothesis of their own research; • analyze and justify the choice of research method; • present in written and oral form the methodology of their own research; • argue, extrapolate, and draw conclusions based on the research results of other scientists.

FINAL ATTESTATION 8 academic credits

Final attestation of the graduate is mandatory and is carried out after mastering the educational programme in full. The aim of the attestation is to evaluate the level of maturity of general cultural and professional competences of the graduate, as well as their readiness to perform basic professional activities.

Final attestation work (*Oral Exam, Written Exam, Master dissertation, Research project, Development project, Organisational project, Strategic project, Art project*)

4.2. Progression of the studies

Modules and courses	Master's degree, 2 academic years			
	1st year of study		2 year of study	
	1 semester	2 semester	3 semester	4 semester

GENERAL EDUCATION 20 academic credits				
History and philosophy of science 4 academic credits	4			
Foreign language 4 academic credits	4			
Pedagogy of higher education 4 academic credits	4			
Psychology of management 4 academic credits	4			
Pedagogical practice 4 academic credits	4			
EDUCATIONAL RESEARCH DESIGN 15 academic credits				
Introduction to Empirical Research in Education 5 academic credits	5			
Research design, data collection and analysis 5 academic credits	5			
Change management 5 academic credits				5
Project management 5 academic credits				
RESEARCH METHODS 25 academic credits				
Qualitative research methods and data collection 5 academic credits		5		
Quantitative research methods and statistical analysis 5 academic credits		5		
Action research 5 academic credits			5	
In-depth study of qualitative analysis methods 5 academic credits			5	
Advanced study of quantitative methods of analysis 5 academic credits				
Research-based decision-making 5 academic credits			5	
Education policy 5 academic credits				
RESEARCH ETHICS AND INTEGRITY 15 academic credits				

Ethics of educational research 5 academic credits	5			
Research integrity 5 academic credits		5		
Social and ethical aspects of diversity and uniqueness 5 academic credits			5	
COMMUNICATION AND DISSEMINATION OF RESEARCH 10 academic credits				
Interaction of the research, social and educational environment 5 academic credits		5		
Oral and written dissemination of research 5 academic credits			5	
RESEARCH WORK OF A MASTER STUDENT 27 academic credits				
Literature review and collection of empirical data 3 academic credits		3		
Research practice 4 academic credits				4
Research work of a Master student 20 academic credits		5	5	10
FINAL ATTESTATION 8 academic credits				
Final Attestation 8 academic credits				8
Academic credits in total	35	28	30	27

4.3. Requirements for successful completion of the curricula

For successful completion of the educational program, Master students shall have:

- minimum credits for core and major subjects;
- achievement of all learning outcomes;
- successful completion of compulsory and optional courses;
- successful fulfillment and defense of Final attestation work (*Oral Exam, Written Exam, Master Dissertation, Research project, Development project, Organisational project, Strategic project, Art project*);

the minimum average achievement score

5. Description of Master students' work

Master students' work includes contact teaching, individual, pair and group work, assignments, exams, etc. 1 ECTS = 30 hours of student work.

Master students' individual and/or pair and group work is divided into two parts: individual and/or pair and group work supervised by a teacher and the work that is performed entirely independently.

Master students' individual and/or pair and group work is carried out on a specific list of topics allocated for independent/group study, provided with educational and methodical literature and recommendations for each course. Master students' individual and/or pair and group work supervised by a teacher is carried out according to the schedule, which determines the university or the teacher themselves.

The entire scope of work performed entirely independently is supported by assignments that require the Master student to work independently on a daily basis.

The ratio of time between classroom contact work, Master students' individual and/or pair and group work is supervised by a teacher, and the work that is performed entirely independently for all types of educational activities is determined by the educational institution independently.

6. Assessment methods/Assessment

6.1. Assessment

The Assessment of learning outcomes is based on the competence objectives of the modules and the resulting evaluation criteria of the courses. Assessment criteria are used as a basis for various tasks. Learning tasks include independent tasks, group tasks, plans, reports, group discussions, group tests, development tasks, laboratory tasks, various tasks for reflection and evaluation, or activating tasks. The assessment generates information for the Master student about their achievement of the competence goals of the pedagogical education modules.

Assessment is at the heart of all competence-based education. Competence-based assessment should measure not only what a Master student knows, but also take into account skills and whether Master students can apply what they know to real life problems or situations. Master students should be given assignments and non-standard problems in situations that students are likely to encounter in the workplace. Assessment plays a very important role in competence-based training. Based on the recognition of prior competence and personal situation, competence can be demonstrated on a per-course basis. The demonstration of competence can cover the entire training module. Specific

guidelines regarding the practice of recognizing and accrediting prior training or training received elsewhere.

Studies are evaluated on a scale basis. Learning achievements (knowledge, abilities, skills and competencies) of Master students are evaluated in points on a 100-point scale, corresponding to the internationally accepted letter system with a numeric equivalent (positive grades, in descending order, from "A" to "D", and "unsatisfactory" - "FX", "F")

Alphabetic system of evaluation of Master students' learning achievements, corresponding to the digital equivalent of the four-point system.

Assessment by letter system	Digital equivalent of points	% content	Assessment according to the traditional system
A	4.0	95-100	Excellent
A-	3.67	90-94	
B+	3.33	85-89	Good
B	3.0	80-84	
B-	2.67	75-79	
C+	2.33	70-74	Satisfactory
C	2.0	65-69	
C-	1.67	60-64	
D+	1.33	55-59	
D	1.0	50-54	Unsatisfactory
FX	0.5	25-49	
F	0	0-49	

The purpose of assessment is to provide guidance and encouragement to Master students, develop their self-assessment abilities, provide information about Master students' competences, and ensure that the competences and intended learning outcomes defined in the educational programme are achieved. Self-assessment skills and peer assessment are considered as the main skills of the world of work, and assessment is a central tool to support the development of these skills during study.

6.2. External evaluation

1) Design of new educational programmes: Internal quality assurance system

The new curriculum needs to be designed through engagement with all stakeholders, including students, faculty, and employers. The aim throughout the process is to retain and further develop the strengths and high quality of the

existing programme while addressing some of the challenges of the current programme, such as the workload demand on students and the need for a course on education management. A survey of all students and alumni, together with focus group discussions and interviews with alumni and employers, also inform the design of the programme. All faculty are involved in discussions of programme aims and learning outcomes, and programme teams worked collaboratively to design the courses for their area of specialization.

On the basis of the faculty (school) of the university, a council on academic quality is formed, which makes decisions on the content and conditions of implementation of curricula, on the policy of evaluation and other academic issues of the faculty (school), organizing a survey of students on the quality of curricula and (or) disciplines/modules.

2) Procedures for external evaluation of the educational programmes: Continuous Improvement

All faculty are actively engaged in continuous improvement of their courses as an integral part of the culture of university and their own professionalism as experts in education. In addition to formal student feedback mechanisms such as course evaluations and Student Committee meetings, faculty and students are to communicate closely regarding specific courses and the programme as a whole. The process of continuous reflection and improvement informs the Annual Programme Monitoring process, in which individual faculty reflect on courses they have taught, this feeds into specialization-level reflection and suggestions for improvements, and this in turn goes to programme and School level reflection and plans for further improvement.

Universities have regular, formal mechanisms for obtaining feedback from employers and the professional community. These interactions also inform the continuous improvement of the programme.

For the improvement of the quality assurance of the educational programmes, the universities need to:

- develop an internal quality system that has a delicate balance between quality assurance and quality enhancement. While quality assurance is more of a preventive measure, quality enhancement has higher-order aims and implies transformational change (Jones, 2003).
- raise institutional awareness and develop deep understanding of the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) (2015) and implement ESG 2015 standards.

- regularly revisit the existing institutional quality processes for ongoing improvement.

3) Accreditation

There are institutional and specialised accreditation in Kazakhstan, they remain voluntary for higher educational institutions. However, accreditation is one of the conditions for obtaining state grants for student education.

7. Faculty requirements

7.1. Faculty Requirements

Availability of teachers in accordance with the disciplines of the educational programme, the correspondence of teachers' education to the profile of the taught disciplines and/or their academic or research degree of "Doctor of Philosophy (PhD)" or "Doctor in Profile", and/or the academic title of "Associate Professor (Associate Professor)", or "Professor" (if any) and/or teachers with the degree of "Master" to the profile of disciplines and (or) senior teachers with at least three years of experience as a teacher or experience practical work on the profile for at least five years.

The advanced/academic degree of the teaching staff corresponds to the academic degree of the doctor/candidate of sciences or the advanced/academic PhD degree of the doctor or master. Basic education or postgraduate education or doctorate/candidate of science degree, advanced/academic PhD degree must correspond to the subjects taught.

7.2. Additionally Required Faculty

Part-time teachers in the main place of work engaged in practical professional activities in the profile of the subjects taught, with at least 3 years of work experience in the field of training. Additionally, leading scientists, specialists from other higher education institutions and research organizations, teachers, and supervisors of schools in corresponding categories such as: expert teacher, research teacher, master teacher, can be involved in the work.

7.3. Required professional development of faculty

On the basis of the Law of the Republic of Kazakhstan "On Education" (2007; with amendments dated 27.12.2019) and other regulatory legal acts regulating the activities of higher education organizations in the Republic of Kazakhstan, a teacher who carries out professional activity in a higher education organization has the right for professional development at least once every five years for a duration of no more than four months.

The development of professional competences is also one of the priorities adopted in the Republic of Kazakhstan "Concepts of lifelong learning (continuing education)" (2021).

7.4. Required additional administrative staff

Vice-rector for academic affairs is responsible for planning and monitoring the implementation of educational services.

Responsibility for arranging and coordinating the implementation of the specific steps of the procedure and the quality of the outputs rests with the heads of divisions.

8. Resources

8.1. Library Resources

The library collection is an integral part of the information resources and includes educational, teaching, scientific and other literature.

Availability of a library fund of educational and scientific literature: in the format of printed and electronic publications for the last ten years, providing 100% of the disciplines of the curricula, including those published in the languages of instruction. Updating of the library fund should be carried out in accordance with the regulations of the Republic of Kazakhstan.

Some examples of the databases:

- Onlinelibrary.wiley.com, Webofscience.com, Rmebrk.kz – republican interuniversity electronic library, Elslantar.kz, e-lib.kazmkpu.kz, openu.kz, KazNEB, Thompson, Springer, electronic library system of "Lan" publishing house, Polpred, Elsevier, EBSCO, IPR-books, Oxford

8.2. IT Resources

University provides Master students with educational and teaching literature and (or) electronic resources necessary for successful implementation of curricula, provides the functioning of the information system of education management (high-tech information and educational environment, including the website, information and educational portal, automated system of credit technology training, a set of information and educational resources).

8.3. Infrastructure

University provides equipment with educational, methodological, scientific and other literature, classrooms with multimedia complexes, computer rooms, access to broadband Internet, sports, material and technical,

educational and laboratory facilities and equipment necessary for the implementation of curriculum.

9. Additional information

9.1. Additional materials

Inclusion is one of the most important cross-cutting principles of the curriculum (see more in Annex 1.). Inclusion in education means that all students, regardless of their possible impairments or disability, should have the opportunity to participate in the regular school systems and study with their peers. The teacher education emphasizes on pre-service teachers' perceptions of themselves as experts in implementing curriculum for diverse learners based on the principles of pedagogy of difference or universal design for all. It is important to renew inclusive pedagogies such as co-teaching and differentiating. It is important that not only the specialized teachers (special education teachers) but all teachers can work in an inclusive educational environment. Thus, competences of all Master students need to be developed in areas such as:

Knowledge of the concepts and principles of inclusive education:

- Evaluation of one's own activity in terms of the values of inclusion.
- Understanding of the implementation of the principle of inclusiveness in education implemented by a flexible model of the educational process: adaptive programmes, changing the ways of assessing educational achievements.
- Understanding of children's different abilities and application of different trajectories to support versatile learners.

Practical applications in teaching:

- Designing of an adapted/individual programme for a child with special education needs in specific subject.
- Using of multimodal universal teaching methods, simple structured speech, use alternative communication.

9.2. E-learning

The rapid development of digital technologies requires the study of not only specific software tools, but the development of pre-service teachers' competences on using virtual learning environments and tools in teaching and choosing pedagogical methods suitable for learning processes in digital learning environments (psychological and didactic justification). For this the universities need:

- to create provisions for the professional development of Master students with the effective use of digital technology;
- to develop competences of Master students on understanding how individual educational needs of their students can be considered when using digital tools or in virtual learning environments;
- to develop digital competences of Master students on using digital learning environments and tools in assessment, such as gamification, digital tests and quizzes, and other formats of digital evaluation;
- to promote pre-service teachers' capabilities in assessing their digital competences and the use of digital tools in pedagogical processes in relation to the requirements of the employers (schools) daily operations;
- to put into practice the integration of education, science, and industry, and involve professional communities in teaching school students the basics of applying and using digital technology, and perform an independent assessment of the practical skills acquired;
- to include digitalization into the educational process for in-service teachers to increase efficiency and practical application of digitalization in education;
- to promote the implementation of global standards in digitalization in initial teacher education (i.e. International Society for Technology in Education (ISTE) and the establishment of an expert community of educators in digitalization.

10. Approval

- Ensure consideration of developed curricula, their coordination and approval by the Republican educational-methodical council of higher and postgraduate education.
- Expand the scope of all developed curricula at pedagogical universities

APPENDIX 1: Main principles of the curriculum

Competence-based approach

Competence-based approach is a learning-oriented way to organise and implement teaching. It is an alternative to more traditional educational approaches mainly focusing on what learners are expected to learn about in terms of traditionally-defined subject content. In designing the curriculum following the principles of competence-based approach, the focus is on what we want our students to learn. Thus, it is essential to define the competences that the students are supposed to learn during their degree programs. The articulation of competences should include both discipline specific skills as well as the generic competences or soft skills that the teacher students should develop during the curricula. Soft skills include, for example, leadership, communication and collaboration skills, reflection skills, social and emotional intelligence etc. The development of these soft skills should be included in all the curricula, the competences and learning outcomes as well as the implementation of the curricula.

After defining the degree level competences, the learning outcomes of study units and study modules should be compiled by comparing them to the objectives of the entire degree. Learning outcomes represent the desired state, which is expressed as knowledge, skills and attitudes. The written learning outcomes of all the interconnected study units should also make visible the accumulated competence. Planning competence-based learning thus starts at degree programme level and is then realised at study unit level through the learning outcomes, the execution of the study unit and its assessment.

The reason for using competence-based approach to designing curricula is that it makes it possible to design courses and study programs in a more student-centred way. Student-centred approach means that the key knowledge and skills that the students need to achieve during their studies determine the content of the course or study programme. The aim of the competence-based approach to designing curricula is that the students acquire the knowledge, skills and attitudes/values that are essential. Further, the competence-based approach supports students to identify the knowledge and skills specific to their discipline or field of education as well as the generic competences that accumulate during their studies and are common to all degrees.

To sum up the key elements in designing competence-based curricula, it is essential to focus on describing explicitly a) what competences (including subject-specific and general competencies) should a student have after graduation/after study unit/after an individual course, b) how do different study

modules, courses and study modes support the development of the competencies, c) how is it ensured that the degree program and the learning objectives of the courses form a coherent entity supporting the development of the competencies, and d) how is it possible for students to make their competence visible (assessment related decision).

The implementation of all curricula should introduce methodologies that promote student-centeredness and active learning, such as gamification, PBL, etc. In a student-centred learning approach, students are active participants, placed at the core of the learning process. The learner is not seen as a passive receiver of knowledge but, rather, an active participant. The teacher's role becomes that of a guide who assists the learner in the difficult process of constructing his/her knowledge. Student-centred approach to teaching broadly means the shift of focus from the teacher to the student and their learning processes (Tran et al., 2010). The emphasis in student-centred approach to teaching is on what the student does and the ways to improve students' active engagement and deep approach to learning (Biggs and Tang, 2011; Prosser and Trigwell, 2014). In student-centred approach the student is seen as an active constructor of knowledge. Thus, the focus of the student-centred teaching practices is to develop autonomy and active learning that eventually enable lifelong learning.

Student-centred approach & Active Learning Methodologies

Student-centredness differs from traditional teaching approach, also known as teacher-centredness, in that the focus is on designing the teaching-learning process in a way that it promotes students' active participation and deep approach. Teaching that requires active engagement from students is likely to increase quality learning (Biggs and Tang, 2011). However, student-centered learning does not sideline or diminish the role of teachers. Instead, it seeks to use teachers' expertise in different ways to increase student engagement.

Student-centeredness requires a change in the mindset of the teachers and has many implications for the teaching practices. For example, teaching and learning activities should be designed in a way that they support and promote active learning. Active learning methods place greater responsibility on the learner rather than passive approaches such as lectures. Active learning activities promote higher order thinking skills such as application of knowledge and analysis and engage students in deep learning processes rather than surface learning. Furthermore, they enable students to transfer and apply knowledge better. There is a variety of active learning methods, such as case studies, problem-solving, group projects, debates, peer teaching, games etc. to mention a few. However, it should be kept in mind that the methods should always be chosen purposefully to support the attainment of the intended learning outcomes.

Thus, when choosing the active learning methods, it should always be considered from the perspective of which methods support the attainment of the intended learning outcomes in a best possible way.

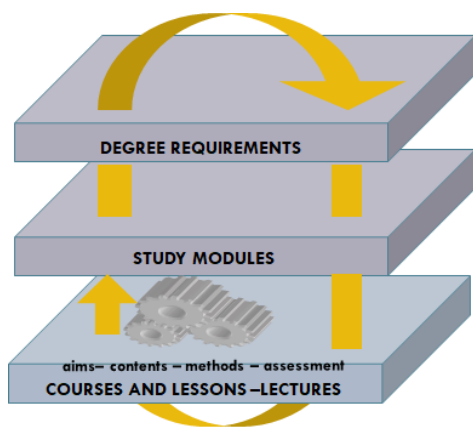
Constructive alignment

The principle of constructive alignment has long been promoted as a powerful way to enhance the quality of teaching and learning (Biggs and Tang, 2011). Constructive alignment is an integrative design for teaching and curriculum design in which the alignment between intended learning outcomes/competences, teaching-learning activities and assessment tasks is emphasised to optimise the conditions for quality learning. The fundamental principle is that curriculum should be designed in such a way that the learning activities and assessment tasks are aligned with the intended learning outcomes (ILOs), and what the students should be able to do or demonstrate after completing the degree, module or a course. High quality learning may be supported by integrating these components together.

Constructive alignment reflects the more general paradigm shift from teacher-centred teaching to student-centred teaching described above. The central step in designing teaching is to define the intended learning outcomes or the competences that the students are supposed to learn during the learning process and how they will demonstrate that learning has taken place (Biggs and Tang, 2011). The role of the instructor is to engage the student in relevant activities that support the attainment of the intended learning outcomes (Biggs, 1996). By choosing appropriate teaching and assessment methods and tasks and aligning them with the intended learning outcomes/competences it is possible to effectively guide students' study practices and enhance deep, meaning-oriented learning (Biggs and Tang, 2011; Boud and Falchikov, 2006). Constructively aligned teaching is essentially a criterion-referenced system where the central elements, that is, intended learning outcomes, teaching-learning activities and assessment, are aligned and there is consistency throughout these elements.

Constructive alignment should be applied at all levels of the educational system, including institutional, departmental and classroom levels as teaching and learning take place in the whole system. In a good system, all aspects of teaching and assessment are tuned to support high level learning, so that all students are encouraged to use higher-order learning processes.

Figure 1. Illustration of constructive alignment



Research-based Initial Teacher Education

The recognition of the importance of research-based teacher education is growing worldwide (Flores, 2018). The research-teaching integration in the teacher educators' work has been suggested to be an effective solution to develop the profession in many aspects. They should be able to make explicit links between the educational theory, research and teaching practices. There is an increasing recognition that research is an important component of teacher education practices and is beneficial for preparing reflective practitioners (Flores, 2018). Research-based teacher education can take place in different forms. In its simplest form, it can mean that the teaching content is based on research, or that the teaching methods and pedagogical designs are based on research. It can also mean that teachers use inquiry-oriented methods in their teaching to enhance their students' own knowledge construction and research skills. Moreover, research-based teacher education can mean that the teacher educators themselves conduct research of their own work or more generally about topics related to teacher educators' work. The different forms of research-based teacher education identified in a recent research are presented in Table 1.

Teaching content is based on research	Teacher educators use their own or others' research as their teaching content to transfer academic knowledge to student teachers and develop the student teachers' independent thinking (Visser-Wijnveen et al. 2010).
Teaching methods and course design are based on research	Teacher educators benefit from their research work in teacher education and develop their teaching methods accordingly (Cochran-Smith 2005; Krokfors et al. 2011).
Applying inquiry-oriented methods in teaching	Teacher educators organise the course based on inquiry-oriented activities to

	guide student teachers to learn in an analytical and inquiring way to develop their pedagogical thinking (Krokmors et al. 2011).
Acting as researchers in teacher education	Teacher educators work as researchers and conduct research on what and how they teach, and on topics in teacher education (Cochran-Smith 2005).
Encouraging student teachers' involvement in research work	Teacher educators involve student teachers in research process to provide them with the experience of conducting research (Visser-Wijnveen et al. 2010).
A supportive relationship between research and teaching	Teacher educators consider the research-teaching nexus is complementary and fairly evident. Teaching and research support each other in a general and broad sense.

Table 1. Forms of research-based teacher education (Cao, Postareff, Lindblom-Ylänne & Toom, 2021)

Teacher education can adopt the research-based approach in diverse ways, and it is important to consider what kind of forms fit the cultural context and practices. The ultimate goal of research-based teacher education is to support student teachers to become pedagogically-thinking, reflective and inquiry-oriented teachers with an inquiring attitude towards teaching. Teachers' pedagogical thinking means the ability to analyse and conceptualise educational occasions and phenomena, to evaluate them as part of larger instructional processes and to make rational and theory-based decisions and justify their decisions and actions as teachers. Their readiness to consume as possibly also conduct research enhances their ability to meet the challenges of the future (Toom et al., 2010).

Research-based teacher education not only enhances the teacher educators' own professional development, but also enhances teacher students' reflective and deep learning. By engaging in research-based activities, the students can acquire a set of highly valued competences, such as critical thinking, problem solving and reflective skills (Lunenberg, 2010). Thus, it is important, that teacher educators support the student teachers' to become reflective practitioners with an inquiring attitude (see Toom et al., 2010), which they can learn not only from what their teachers say about how to teach, but most importantly, from how their teachers engage their students in collaborative and interactive teaching-learning activities (Berry, 2004).

To make research-based teacher education occur in practice, it should be made visible in the teacher education curricula. Secondly, the teacher education programmes should develop their students' inquiry-oriented and research-oriented approach to their work and enhance their research skills. Becoming an inquiry-oriented reflective practitioner requires time and space to deeply reflect on theory, practice, and the link between them. Therefore, the curriculum of teacher education should provide possibilities for reflection and practicing new skills.

Interdisciplinary learning

Content and Language Integrated Learning (CLIL)

CLIL (Content and Language Integrated Learning) is a dual-focused educational approach in which an additional language is used for learning and teaching of both content and language (Coyle, Hood & Marsh, 2010:1). The umbrella term of CLIL also includes a range of other language programs, such as bilingual education, English-medium of education or immersion programs (Coyle, 2007; Mehisto, Marsh, and Frigols, 2008). But CLIL differs from those language programs by its equal focus on both content and language (Coyle, 2008; Dalton-Puffer, 2008; De Zarobe, 2008; Marsh, 2012). Thus, this approach is neither language learning nor subject learning but a combination of both; hence, attention is given both to the language and the content. Contrary to the common belief, the CLIL instruction takes place with and through a foreign language and it is not the approach when non-language subjects are taught in the foreign language (Eurydice, 2006).

The reasons for introducing CLIL include provision of a more holistic educational experience for the student as well as content-and language-learning outcomes realized in class. Furthermore, benefits of CLIL are also linked with insights from interdisciplinary research within neurosciences and education (Coyle, Hood & Marsh, 2010). Due to these advantages CLIL is increasingly attracting stakeholders' attention across continents.

In terms of the curriculum implementation, the CLIL approach is inclusive and flexible; it includes a range of models that can be adapted according to the age, ability and needs of the students (Coyle, 2007). Thus, implementing CLIL varies based on the context. In primary stage, language learning can be embedded across the curriculum and link with one or more subjects of the curriculum. For example, through specific themes or projects (e.g. lifestyle, sports, and holidays).

Secondary CLIL can make specific links between a language and a subject (e.g. history through Kazakh, science through English) or it can take a broader

approach integrating language with parts of curriculum. More recently, CLIL is less aligned to a single subject and is evolving through links with a variety of subjects or themes. The content for lessons can include particular aspects of the curriculum for individual subjects. In practical terms, lesson planning involves joint effort across a number of subjects focusing on the cross-curriculum feature for the secondary curriculum. But there is a need for research to explore whether such an approach is compatible with the local context.

The existing curriculum models integrating CLIL vary in length from a single unit which comprise a sequence of 2-3 lessons to a more sustained approach through modules lasting half a term or more. Some successful cases include schools with bilingual sections where subjects are taught through the medium of another language for extensive periods (Coyle et al., 2010).

STEM (Science, Technology, Engineering, Mathematics) education

Interdisciplinarity in natural sciences and mathematics, so called STEM - education can be defined as “an effort to combine some or all of the four disciplines of science, technology, engineering, and mathematics into one class, unit, or lesson that is based on connections between the subjects and real-world problems” (Moore et al. (2014). Implementation and integration of engineering in K-12 STEM education. In S. Purzer, J. Strobel, & M. Cardella (Eds.), *Engineering in Pre-College Settings: Synthesizing Research, Policy, and Practices* (pp. 35–60). West Lafayette: Purdue University Press.). STEM - pedagogy in teacher education aims to prepare students to design, teach and develop research-based active learning STEM -lesson plans to educate competent citizens, who can access and make sense of science relevant to their lives and global perspectives (Feinstein, N. W., Allen, S., & Jenkins, E. (2013). *Outside the pipeline: Reimagining science education for nonscientists*. *Science*, 340(6130), 314-317.).

Active learning includes student centered active methods, such that project based education, and benefitting from diverse out of classroom learning environments and communities of learners and ICT. On the hand, Science education should also focus on competences with an emphasis on learning through science and shifting from STEM to STEAM (A = All) by linking science with other subjects and disciplines (Hazelkorn, Ellen & Ryan, Charly & Beernaert, Yves & Constantinou, Costas & Deca, Ligia & Grangeat, Michel & Karikorpi, Mervi & Lazoudis, Angelos & Pintó, Roser & Welzel-Breuer, Manuela (2015). *Science Education for Responsible Citizenship*. 10.2777/12626). In the ITE curricula in Kazakhstan, the A should include at least developing the English linguistic skills of teacher students (KAZ ITE D-3 Framework Report).

Digitalisation in Education and Teachers' Digital competence development

New information and communication technologies (ICTs) provide teachers and learners with an innovative learning environment to stimulate and enhance the teaching and learning process. In this context, novel educational concepts such as online learning, or blended and hybrid learning are being developed (López-Pérez, Pérez-López & Rodríguez-Ariza, 2011). Hybrid or blended learning can be defined as the integration of face-to-face classroom instruction learning with web-based tools and materials (e.g. Garrison & Kanuka, 2004), as contrast to fully online learning. Blended or hybrid learning is becoming increasingly significant to complement traditional forms of learning. Often these two terms are defined similarly, but can also be differentiated. Blended learning can be defined as a mix of various event-based activities, including conventional face-to-face classrooms instruction, e-learning, and self-paced learning, while in hybrid learning a part of the learning activities and assignments are transferred from the face-to-face environment to the distance learning environment (see Valiathan, 2002, in Koohang, Britz & Seymor, 2006).

Blended forms of learning has the potential to enhance both the effectiveness and efficiency of meaningful learning experiences, and some researchers have suggested that blended learning has the potential to be even more effective and efficient when compared to a traditional classroom model (see Garrison & Kanuka, 2004). Other benefits of blended forms of learning include convenience, student satisfaction, flexibility and higher retention (Koohang, Britz & Seymor, 2006).

Especially in situations where student numbers are high, online, blended or hybrid forms of learning have the potential to provide greater opportunities for improved learning (Osguthorpe & Graham, 2003). In teacher education, student teachers can also learn from their teachers the use of various digital tools and platforms. Thus, not only teacher educators should have the skills to adopt digital tools in their teaching, but also student teachers should develop their digital skills during teacher education. Times faced with uncertainty and sudden changes, such as pandemics, require flexible and advanced use of digital tools and instructional practices functional in online contexts.

Inclusion in education and recognition of different learners

Inclusion in education is a principle which means that all students, regardless of their possible impairments or disability, should have the opportunity to participate in the regular school systems and study with their peers. Inclusion is based on several international United Nations declarations, such as the Salamanca Statement (1994) and The Universal Declaration of Human Rights (1948).

Inclusive pedagogy is a pedagogical approach that is impacted by the sociocultural context of learning (Florian & Black-Hawkins, 2011) and it aims to respond to the diverse learning needs of students in as varied ways as possible.

The concepts of 'inclusion' and 'diversity' are reviewed in the teaching and education practices with the activities and arrangements that promote inclusion as the centre. The key words in education are educational equality, accessibility, individuality, lifelong learning and co-operation. The teacher training emphasizes on teachers' perceptions of themselves as experts in implementing curriculum for diverse learners based on the principles of pedagogy of difference or universal design for all. It is important to renew inclusive pedagogies such as co-teaching and differentiating. The teacher's task is to teach and guide students to become lifelong learners while taking each student's individual learning style into account. Four core values related to teaching and learning have been identified as the basis for the work of all teachers in inclusive education (European Agency). These core values are associated with areas of teacher competence. The areas of competence are made up of three elements: attitudes, knowledge and skills. All teachers must commit to the idea of equality for all students. (Saloviita, 2018.)

Teachers' professional development and change management

Considering the dynamic and constantly changing nature of teachers' work, teachers at all levels must be continuous learners throughout their professional careers. Teachers' professional development needs to address simultaneously the teachers' beliefs and conceptions and the improvement in their practices (Timperley & Phillips, 2003), as well as integration of theoretical and practical knowledge (Tynjälä, Häkkinen & Hämäläinen, 2004). Often an experience of a successful implementation in teaching changes teachers' attitudes and beliefs, and therefore, positive experiences are central for teachers' professional development (Guskey, 1989).

Development and growing as a teacher can be understood in different ways: 1) growing understanding of one's content area, in order to become more familiar with what to teach; 2) getting more practical experience as a teacher, in order to become more familiar with how to teach; 3) building up a repertoire of teaching strategies, in order to become more skilful as a teacher; 4) finding out which teaching strategies work best for the teacher, in order to become more effective as a teacher, and 5) continually increasing understanding of what works for students, in order to become more effective in facilitating student learning (Åkerlind, 2007).

It is important to notice, that professional development of teachers is often a slow process. Furthermore, the development is not a linear continuum, but instead, the

development may be interrupted by various reasons (Beijaard, Meijer & Verloop, 2004). Some teachers may experience change and development as threatening and change processes often include feelings of anxiety or uncertainty (Postareff et al., 2008). Such negative emotions towards the change may narrow the teacher's attention (Fredrickson, 2001). Therefore, it is important to ensure that teachers receive enough support from diverse sources (e.g. peers, supervisors, work environment) and encouraging feedback. It is also important for teachers to understand, that failures are part of the teachers' professional development, and mistakes should be seen as learning opportunities. When teachers have the possibility to share experiences and engage in collaboration with their peers, it has been shown to have positive influences of their learning and development (Voogt, et al., 2011). When teachers feel well and are engaged in their work, they are more likely to engage in pedagogical practices that promote their development (Fredrickson, 2001) The development of teaching is, at best, a continuous process, and thus, teachers should be encouraged to reflect on their own teaching on a continuous basis to increase their pedagogical awareness (Parpala & Postareff, 2021).

Teachers should also be provided with agency, which refers to the teacher's possibilities to influence, make decisions and take actions. The aim of exercising agency is to create new work practices and transforming the course of activities (Hökkä et al., 2012). When teachers have a possibility engage in development and changes, and when they experience that their opinions truly matter, they are likely to become highly engaged in their work (e.g. Day, Elliot & Kington, 2005; Pyhältö et al. 2012).

Literature

Beijaard, D., Meijer, P. C., & Verloop, N. (2004). Reconsidering research on teachers' professional identity. *Teaching and teacher education*, 20(2), p. 107-128.

Berry, A. (2004). Self study in teaching about teaching. In J. J. Loughran, M. L. Hamilton, V. K. LaBoskey, & T. Russell (Eds.), *International handbook of self-study of teaching and teacher education practices*. Dordrecht: Springer. 1295-1332.

Biggs, J. (1996). Enhancing Teaching through Constructive Alignment. *Higher Education*, 32, p. 347-364.

Biggs, J., & Tang, C. (2011). *Teaching for Quality Learning at University*. Maidenhead, UK: Open University Press.

Boud, D. & Falchikov, N. (2006): Aligning assessment with long -term learning
Assessment & Evaluation in Higher Education, 31(4), p. 399-413

Cao, Y., Postareff, L., Lindblom-Ylänne, S. & Toom, A. (2021). A survey research on Finnish teacher educators' research-teaching integration and its relationship with their approaches to teaching. *European Journal of Teacher Education*.

Cochran-Smith, M. (2005). Teacher Educators as Researchers: Multiple Perspectives. *Teaching and Teacher Education*, 21(2), p. 219–225.

Coyle, D. (2007). Content and Language Integrated Learning: Towards a Connected Research Agenda for CLIL Pedagogies. *International Journal of Bilingual Education and Bilingualism*, 10(5), p. 543–562.

Coyle, D. (2008). CLIL - a Pedagogical Approach From the European Perspective. In *Encyclopedia of Language and Education*, edited by N. Hornberger, p. 1200–1214. Boston: Springer US.

Coyle, D., Hood, P., & Marsh, D. (2010). *CLIL: Content and Language Integrated Learning*. Cambridge: Cambridge University Press.

Dalton-Puffer, C. (2008). Outcomes and Processes in Content and Language Integrated Learning (CLIL): Current Research From Europe. In *Future Perspectives for English Language Teaching*, edited by W. Delanoy, and L. Volkman, p. 1–19. Heidelberg: Carl Winter.

Day, C., Elliot, B., & Kington, A. (2005). Reform, standards and teacher identity: Challenges of sustaining commitment. *Teaching and teacher Education*, 21(5), p. 563-577.

De Zarobe, Y. R. (2008). CLIL and Foreign Language Learning: A Longitudinal Study in the Basque Country. *International CLIL Research Journal*, 1(1), p. 60–73.

European Agency. *Profile of Inclusive Teachers*. <https://www.european-agency.org/projects/te4i/profile-inclusive-teachers>

Eurydice. 2006. *Content and Language Integrated Learning (CLIL) at School in Europe*. Brussels: Eurydice.

Fimyar, O., Yakavets, N., & Bridges, D. (2014). The contemporary policy agenda. In D.Bridges (Ed), *Educational Reform and Internationalisation. The case of school reform in Kazakhstan* (pp. 53-68). Peterborough, UK: Printondemand-worldwide.

Feinstein, N. W., Allen, S., & Jenkins, E. (2013). Outside the pipeline: Reimagining science education for nonscientists. *Science*, 340(6130), p. 314-317

Flores, M.A. (2018). Linking Teaching and Research in Initial Teacher Education: Knowledge Mobilisation and Research-informed Practice. *Journal of Education for Teaching*, 44 (5), p. 621–636.

Florian, L., & Black

Educational Research Journal, 37(5), p. 813–828.

~~Brian~~kins, K. (2011)

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions. *American psychologist*, 56(3), p. 218.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The internet and higher education*, 7(2), p. 95-105.

Guskey, T.R. (1989). Attitude and perceptual change in teachers. , 13, p. 439-453.

Hazelkorn, E., Ryan, C., Beernaert, Y., Constantinou, C., Deca, L., Grangeat, M., Karikorpi, M., Lazoudis, A., Pintó, R. & Welzel-Breuer, M. (2015). *Science*

Education for Responsible Citizenship. European Commission: Directorate-General for Research and Innovation, Science with and for Society.

Hökkä, P., Eteläpelto, A., & Rasku-Puttonen, H. (2012). The professional agency of teacher educators amid academic discourses. *Journal of Education for Teaching*, 38(1), p. 83-102.

IAC (2018). Analytical Report. Monitoring and assessment of implementation of a flexible form of management in universities. IAC.

Jones, S. (2003). Measuring the quality of higher education: linking teaching quality measures at the delivery level to administrative measures at the university level. *Quality in Higher Education*, 9(3), 223-229.

Koohang, A., Britz, J., & Seymour, T. (2006). Panel Discussion. Hybrid/blended learning: Advantages, Challenges, Design and Future Directions. *In Proceedings of the 2006 Informing science and IT education joint conference* (p. 155-157).

Krokkfors, L., Kynäslähti, H., Stenberg, K., Toom, A., Maaranen, K., Jyrhämä, R., Byman, R. & Kansanen, P. (2011). Investigating Finnish Teacher Educators' Views on Research-based Teacher Education. *Teaching Education*, 22(1), p. 1–13.

López-Pérez, M. V., Pérez-López, M. C., & Rodríguez-Ariza, L. (2011). Blended learning in higher education: Students' perceptions and their relation to outcomes. *Computers & education*, 56(3), p. 818-826.

Lunenberg, M. (2010). Characteristics, scholarship and research of teacher educators. In P. Peterson, E. Baker, & B. McGaw (Eds.), *International encyclopedia of education* (p. 676-680). Oxford, UK: Elsevier.

McLaughlin, C., Winter, L., Kurakbayev, K., Kambatyrova, A., Torrano, D., Fimyar, O., Ramazanova, A. (2016). The Improvement of Secondary Education Curriculum of Kazakhstan in the Context of Modern Reforms (unpublished report). Astana: Nazarbayev University Graduate School of Education.

Marsh, D. (2012). *Content and Language Integrated Learning (CLIL). A Development Trajectory*. Cordoba: Servicio de Publicaciones de la Universidad de Córdoba.

Mehisto, P., Marsh, D. & Frigols, M. J. (2008). *Uncovering CLIL Content and Language Integrated Learning in Bilingual and Multilingual Education*. London: Macmillan.

Moore, T. J., Stohlmann, M. S., Wang, H. H., Tank, K. M., Glancy, A. W., & Roehrig, G. H. (2014). Implementation and integration of engineering in K-12 STEM education. In *Engineering in Pre-College Settings: Synthesizing Research, Policy, and Practices* (p. 35-60). West Lafayette: Purdue University Press.

OECD (2014). Reviews of National Policies for Education: Secondary Education in Kazakhstan. Retrieved from: <http://dx.doi.org/10.1787/9789264205208-en>

OECD (2020). *Raising the Quality of Initial Teacher Education and support for early career teachers in Kazakhstan*. OECD Education Policy Perspectives, No. 25, OECD Publishing, Paris.

"On Education" (2007) Law of the Republic of Kazakhstan; with amendments dated 27.12.2019.

On approval of the Lifelong Learning (continuing education) Concept (2021). Resolution No. 471 of the Government of the Republic of Kazakhstan dated 8 July 2021.

Osguthorpe, R. T., & Graham, C. R. (2003). Blended learning environments: Definitions and directions. *Quarterly review of distance education*, 4(3), p. 227-33.

Parpala, A., & Postareff, L., (2021). Supporting high-quality teaching in higher education through the HowUteach self-reflection tool. *Ammattikasvatuksen aikakauskirja*, 4, 2021.

Postareff, L., Lindblom-Ylänne, S., & Nevgi, A. (2008). A follow-up study of the effect of pedagogical training on teaching in higher education. *Higher Education*, 56(1), p. 29-43.

Prosser, M., & Trigwell, K. (2014). Qualitative Variation in Approaches to University Teaching and Learning in Large First-Year Classes. *Higher Education*, 67, p. 783-795.

Pyhältö, K., Pietarinen, J., & Soini, T. (2012). Do comprehensive school teachers perceive themselves as active professional agents in school reforms? *Journal of Educational Change*, 13(1), p. 95-116.

Salamanca Statement. (1994). *The Salamanca statement and framework for action on special needs education*. Salamanca: UNESCO, Ministry of education

and Science. <https://www.european-agency.org/sites/default/files/salamanca-statement-and-framework.pdf>

Saloviita, T. 2018. Attitudes of Teachers Towards Inclusive Education in Finland.

<https://www.tandfonline.com/doi/full/10.1080/00313831.2018.1541819>

Sharplin, E., Ibrasheva, A., Shamatov, D., Rakisheva, A. (2020). Analysis of Teacher Education in Kazakhstan in Context of Modern International Practice. *Bulletin of KazNU, Pedagogical Series*, 64(3), pp. 12-27.

SESPE (State Educational Standard for Primary Education). (2015) Available from: <http://nao.kz/loader/fromorg/2/22> Accessed: 29 November 2021.

Silova, I., and G. Steiner-Khamsi. (2008). *How NGOs React: Globalization and Education Reform in the Caucasus, Central Asia, and Mongolia*. Bloomfield, CT: Kumarian Press.

The Universal Declaration of Human Rights (1948). <https://www.un.org/en/aboutus/universal-declaration-of-human-rights>

Timperley, H. S., & Phillips, G. (2003). Changing and sustaining teachers' expectations through professional development in literacy. *Teaching and teacher education*, 19(6), p. 627-641.

Toom, A., Kynäslähti, H., Krokfors, L., Jyrhämä, R., Byman, R., Stenberg, K., Maaranen, K., & Kansanen, P. (2010). Experiences of a research-based approaches to teacher education: Suggestions for future policies. *European Journal of Education*, 45(2), p. 331-344.

Tran, N., Charbonneau, J., Benitez, V.V., David, M.A., Tran, G., & Lacroix, G. (2016). Tran et al conference ISBT 2010.

Tynjälä, P., Häkkinen, P., & Hämäläinen, R. (2014). TEL@ work: Toward integration of theory and practice. *British Journal of Educational Technology*, 45(6), p. 990-1000.

Yakavets, N., Bridges, D. & Shamatov, D. 2017. 'On constructs and the construction of teachers' professional knowledge in a post-Soviet context', *Journal of Education for Teaching: International Research and Pedagogy*. 1-22.

Visser-Wijnveen, G. J., Van Driel, J. H., Van Der Rijst, R.M., Verloop, N. & Visser, A. (2010). The Ideal Research-teaching Nexus in the Eyes of Academics:

Building Profiles. *Higher Education Research & Development*, 29 (2), p. 195–210.

Voogt, J., Westbroek, H., Handelzalts, A., Walraven, A., McKenney, S., Pieters, J., & De Vries, B. (2011). Teacher learning in collaborative curriculum design. *Teaching and teacher education*, 27(8), p. 1235-1244.

Åkerlind, G. S. (2007). Constraints on academics' potential for developing as a teacher. *Studies in higher education*, 32(1), p. 21-37.