

1. General information

1.1. Curriculum title	Education Management and Leadership	
1.2. Curriculum developing team	Leading University	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	
1.6. Expected program duration	2 years	
1.7. Short curriculum description Curriculum goals and objectives	This Educational Programme (EP) " <i>Education Management and Leadership</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) "*Education Management and Leadership*" is a Master level programme for teachers and other professional who wish to specialize in educational leadership (in schools, colleges, high schools, universities). 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", "Pedagogical ethics and values", "Sustainable leadership and organizational management", "School development", "Action Research", "Research work of a Master student", including Final Attestation/Master Dissertation.

The graduates of the programme will have the skills of managing an educational organization, e.g. the management of organizational culture, and human and physical resources. They will master the theoretical foundation educational of leadership and management and apply their knowledge in practice.

The programme is practice-oriented and aimed at fulfilling the educational objectives of the Republic of Kazakhstan to train 1,000 principals for new schools, as well as an administrative personnel reserve until 2025.

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 leadership and values**
Pre-service teachers identify themselves as ethical leaders capable of creating values, revising established ones, as well as maintaining and developing school culture. Pre-service teachers can create and manage communities, their affiliation and behavior in accordance with the principles and universal well-being.
- **Competence area for Action Research**
Pre-service teachers understand action research as a guiding philosophy, and a method of cognition containing, among other things, various quantitative and qualitative research methods on the basis of which they are able to build understanding to make any decisions. Pre-service teachers are able to identify a problem promptly, without stopping the process, build hypotheses to solve the problem, test them, and embed the solution into the system for improvement and development.
- **Competence area for Development of organizational culture**
Pre-service teachers are able to build an organizational culture in accordance with international and/or Kazakh norms. Pre-service teachers understand the principles of project management and various types of resources, and have knowledge and sufficient motivation to form strategic documents in the educational organization aimed at qualitative and quantitative improvements and development.
- **Competence area for Policies and regulations**
By using an analytical approach and various types of scientific research methods, pre-service teachers are able to analyze policies, various national and local legal acts that regulate the educational system and protect the rights of students in Kazakhstan and globally. Pre-service

teachers understand the principles of their formation, own a professional dictionary, are able to compare, analyze, draw conclusions and offer their vision on politics and RLA.

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, Master students are able to proficiently prepare scientific reports, publications, and presentations, and share and utilize them in their professional activities. systematization of results, as well as draw conclusions and argue them.

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) Pedagogical component, 2) Subject component, and 3) Research 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. Value-Driven leadership 2. Introduction to Pedagogical Leadership 3. Assessment of the quality of education 4. Personnel management 5. Infrastructure management and financial management 6. Infrastructure management and financial management in organizations of special and professional education 7. Implementation of changes in the organizational structure 8. Management in special and professional educational organizations

	<ul style="list-style-type: none"> 9. Formation of school culture and development of professional communities 10. International practices in improving the efficiency and development of the school 11. Education policy and practice 12. Policies and practices in special and vocational education 13. Improving the quality of teaching and learning: Action Research 14. Research design, data collection and analysis
Research component (university and optional component)	<ul style="list-style-type: none"> 1. Research practice 2. Research work of a Master student 3. Final attestation (Master Dissertation)

4.1. Structure of the programme

Code	Module name and main disciplines
GES-Ms	GENERAL EDUCATION
	University Component
GES-Ms 701	History and philosophy of science
GES-Ms 702	Foreign language
GES-Ms 703	Pedagogy of higher education
GES-Ms 704	Psychology of management
GES-Ms 705	Pedagogical practice
PEV-Ms	PEDAGOGICAL ETHICS AND VALUES
	University Component
PEV-Ms 701	Value-Driven Leadership
PEV-Ms 702	Introduction to Pedagogical Leadership
PEV-Ms 703	Assessment of the quality of education
SLM - Ms	SUSTAINABLE LEADERSHIP AND ORGANIZATIONAL MANAGEMENT
	University Component
SLM – Ms 801	Personnel management
	Optional Component
SLM Ms – 802/1	Infrastructure management and financial management
SLM Ms – 802/2	Infrastructure management and financial management in organizations of special and professional education
SLM Ms – 902/1	Implementation of changes in the organizational structure
SLM Ms – 902/2	Management in special and professional educational organization
SDev-Ms	SCHOOL DEVELOPMENT
	University Component
SDev-Ms 801	Formation of school culture and development of professional com
SDev-Ms 902	International practices in improving the efficiency and developmen
	Optional Component

SDev-Ms 801/1	Education policy and practice	
SDev-Ms 801/2	Policies and practices in special and vocational education	
AR-Ms	ACTION RESEARCH	
	University Component	
AR-Ms 901	Improving the Quality of Teaching and Learning: Action Research	
AR-Ms 902	Research design, data collection and analysis	
RW-Ms	RESEARCH WORK OF A MASTER STUDENT	
	University Component	
RW-Ms 1002	Research practice	
RW-Ms 8910	Research work of a Master student	
FinEx	FINAL ATTESTATION	
	Total academic credits	

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.
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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; • 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

	<ul style="list-style-type: none"> • 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	Master students who demonstrate competence can:

	<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.
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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.

Pedagogical ethics and values 15 academic credits	
<p>This module is fundamental theoretical by nature. After mastering the module, Master students are able to critically evaluate the processes of teaching and learning at school, adopt stable concepts of research ethics, and interact with the professional team, parents and students creating a healthy</p>	

community in every sense. During the module, Master students reflect on the concepts of social and emotional well-being and the environment, and gain skills in constructing new values.

Course title	Value-Driven leadership
Component	Subject component, University component
Cycle	Major disciplines
Module	Pedagogical ethics and values 15 academic credits
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for leadership and values • Competence area for Policies and regulations <p>Master students develop their understanding of the importance of values as a core element of school practice, development, and leadership. They build a value-oriented learning community that includes all stakeholders, where the core values are visible in the school curriculum and daily work at school. Master students also understand their role as the school's value leader. They manifest school values in their daily practice and in building their professional identity striving for the unshakable values of children's rights. Master students can work in a multilingual and multicultural environment and respect the cultural heritage, habits and values of each member of the school community.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • define the values of the organization and state them in the form of a document; • analyze international basic documents on the protection of human rights, children's right, and people with special educational needs; • apply methods on their professional context and the surrounding educational and social environment; • reflect on their actions and analyze the actions of colleagues and students; • develop an action plan aimed at the well-being of the learning community, and understand the mechanisms of implementing it as a group leader.

Course title	Introduction to Pedagogical Leadership
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Component	Subject component, University component
Cycle	Major disciplines
Module	Pedagogical ethics and values 15 academic credits
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for leadership and values • Competence area for Development of organizational culture <p>Master students position and conceptualize pedagogical leadership as part of education management. They understand how their pedagogical leadership serves teaching and learning processes and how they can use physical and human resources of the school to achieve educational goals. They also understand the importance of pedagogical leadership for individuals and communities in the constantly changing context of education and learning. Master students are able to develop their own and their colleagues' pedagogical competences by creating new learning communities and teams within the school and by using new learning environments, tools, and updated teaching methods. They deeply understand the connection between pedagogical leadership and the main curriculum of the school.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • make decisions including the opinions of a team or team members; • create a team of trained teachers – agents of change and innovation; • understand the conceptual foundations of change management.

Course title	Assessment of the quality of education
Component	Subject component, University component
Cycle	Major disciplines
Module	Pedagogical ethics and values 15 academic credits
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for leadership and values

	<ul style="list-style-type: none"> • Competence area for Action Research • Competence area for Development of organizational culture <p>Master students explore the aspects of a school quality assurance program and an internal evaluation system linked to school's strategy and annual plan. They use internal and external evaluation data to develop the school curriculum and daily implementation of teaching and learning. They also analyze the data through various perspectives such as socio-economic, pedagogical, and social frameworks. Master students recognize improvement areas and use resources where a school should mainly be developed. They identify teacher training goals to serve this development. They also establish constructive ways to collect positive and negative feedback from the entire school community.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • evaluate modern approaches and methods of quality assessment; • analyze the current state of the quality of education in an organization; • build a system for assessing the quality of education in their institution based on international and national standards; • analyze and use the results of various types of assessment to improve a school and its curriculum and practices.
<p>Sustainable leadership and organizational management 15 academic credits</p>	
<p>During the module, Master students apply methods for managing human and physical resources, as well as building a comfortable learning and work environment for all participants by utilizing theory and practice of management. Master students consider sustainability as a management style and culture in which an atmosphere of trust, openness and honesty towards oneself and each other is created. Master students combine the theoretical knowledge with a specially dedicated practice in this module. The disciplines in the module are chosen to deepen and expand the skills and applied practices in administering the organization of education.</p>	
Course title	Personnel management
Component	Subject component, University component

Cycle	Major disciplines
Module	Sustainable leadership and organizational management 15 academic credits
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for Development of organizational culture • Competence area for Policies and regulations <p>Master students investigate the Kazakh legislation and regulations related to human resources and labor legislation of the Republic of Kazakhstan. They also explore the principles of good and transparent management and understand the values of the school in human resource management. Master students are able to activate and develop each individual's potential and competences by creating collaboration models and an interactive work community where each individual is a part of a strong learning community.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • navigate the labor legislation and regulation of labor relations of the Republic of Kazakhstan; • analyze the psychological qualities and values of candidates and their alignment with the mission and vision of the educational organization; • systematically assess the competence of the team and contribute to its professional development; • maintain a friendly atmosphere of mutual trust and well-being in the team; • settle conflicts and communicate with representatives of different communities.
Course title	Infrastructure management and financial management
Component	Subject component, Optional component
Cycle	Major disciplines
Module	Sustainable leadership and organizational management 15 academic credits
Academic credits	5

Course Description/ competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for Development of organizational culture • Competence area for Policies and regulations <p>Master students get familiar with how the school budget is formed and investigate the public procurement procedures fully accepting and sharing anti-corruption values. Master students find ways to attract sponsors to develop the school, improve the learning environment, and increase the opportunities of students. They create an annual schedule suitable for managing the school’s daily activities and finances. Master students create the understanding that the learning environments should be developed together with the school curriculum and teaching and learning practices. They also deepen their understanding of the differences between the subjects and the content of training being able to develop the learning environment to follow modern pedagogical approaches.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • understand the specifics of the budget of an educational organization; • manage the distribution of funds (financial, logistical) to create a comfortable learning environment; • analyze the current situation with the physical resources necessary for a comfortable and safe educational environment for all students and teachers and plan improvements, including from extra-budgetary funds.

Course title	Infrastructure management and financial management in organizations of special and professional education
Component	Subject Component, Optional Component
Cycle	Major disciplines
Module	Sustainable Leadership and Organizational Management 15 academic credits
Academic credits	5

Course Description/competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for Development of organizational culture • Competence area for Policies and regulations <p>Master students explore how educational organizations are formed and explore the related public procurement procedures, fully accepting and sharing anti-corruption values. Master students seek ways to attract sponsors to grow the educational organization to improve the learning environment and empower students. They draw up an annual schedule suitable for managing the school's day-to-day operations and finances. Master students create an understanding that the learning environment should be developed along with the educational program and teaching practice. They also deepen their understanding of the differences between subjects and learning content, being able to design the learning environment in accordance with the needs of the learners and modern pedagogical approaches.</p>
Learning outcomes	<p>Master students demonstrating competence can:</p> <ul style="list-style-type: none"> • understand the specifics of the budget of an educational organization; • manage the distribution of funds (financial, logistical) to create a comfortable learning environment; • analyze the current situation with the physical resources necessary for a comfortable and safe educational environment for all students and teachers, and plan improvements, including through extrabudgetary funds.

Course title	Implementation of changes in the organization structure
Component	Subject component, Optional component
Cycle	Major disciplines
Module	Sustainable leadership and organizational management 15 academic credits
Academic credits	5
Course Description/competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for Development of organizational culture

	<ul style="list-style-type: none"> • Competence area for Policies and regulations <p>Master students deepen their understanding of the uniqueness of school's organizational culture and its interrelation with pedagogical leadership. Master students collect and use reliable data to make changes in organizational structures and culture. They develop teachers' abilities to lead change together with the school leader.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • analyze and make their own plans for implementing changes based on local, global, or their own research; • monitor the progress of an educational organization, adapt it to improve well-being of all participants in the educational process.

Course title	Management in special and professional educational organizations
Component	Item Component, Choice Component
Cycle	Major disciplines
Module	Sustainable Leadership and Organizational Management 15 academic credits
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for Development of organizational culture • Competence area for Policies and regulations <p>Master students expand their knowledge of management and leadership in special and professional organizations. They analyze scientific research with best international practices. Master students investigate the structural features of the special and professional educational institutions and make feasible proposals for their change and improvement.</p>
Learning outcomes	<p>Master students demonstrating competence can:</p> <ul style="list-style-type: none"> • analyze literature and world experience in the field of organizations of special and professional education; • Improve the work of the educational organization and promote the development of its students and staff.

School development 15 academic credits

During the module, Master students inquire the theory and best applied practices of building a school culture where people feel valued. Through a detailed study Master students explore the regulatory and legal documentation of the Republic of Kazakhstan related to education, as well as global and Kazakhstani educational experiences. As a result of studying the module, master students are able to give critical assessment and analysis of phenomena in educational policy and build their case studies as examples. During the module, Master students create a theoretical framework of a case for subsequent testing and implementation in the framework of data collection for a dissertation.

Course title	Formation of school culture and development of professional communities
Component	Subject component, University component
Cycle	Major disciplines
Module	School development 15 academic credits
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for leadership and values • Competence area for Action Research • Competence area for Development of organizational culture <p>Master students understand school culture as an environment that is constantly in need for support and development, capable of change and improvement. They explore the ways of forming school culture based on research, apply methods of monitoring changes in school culture after the introduction of innovations, and respond to them in a rational, contextually appropriate way. Master students analyze and evaluate the ways of interaction between social and educational environment, and between groups of people, individuals and organizations, and their influence on each other. They create new or improve old ways of interaction based on the values of universal well-being.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • deeply understand of the mechanisms of interaction and their influences; • put into practice ways of changing school culture;

	<ul style="list-style-type: none"> develop plans to change the school culture towards general well-being.
Course title	International practices in improving the efficiency and development of the school
Component	Subject component, University component
Cycle	Major disciplines
Module	School development 15 academic credits
Academic credits	5
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> Competence area for Action Research Competence area for Development of organizational culture Competence area for Policies and regulations <p>Master students critically analyze and evaluate world practices in improving the efficiency and development of the school by studying relevant literature and other materials through which they are able to recommend and adapt suitable world practices for a specific educational organization. They are also able to develop the change management skills within an educational organization. Master students identify and classify school performance parameters based on external and internal assessments and investigate the state standards for evaluating the effectiveness of an educational organization.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> understand the methodological foundations of change management; integrate world practices into the development strategy of an educational organization.
Course title	Educational policies and practices
Component	Subject component, Optional component
Cycle	Major disciplines
Module	School development 15 academic credits
Academic credits	5

Course Description/competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for Development of organizational culture • Competence area for Policies and regulations <p>Master students explore educational policies through the types of existing classifications of normative legal acts and the types of future classifications of standards, guidelines, and practices. They consider the process of creating educational policies and their structure, and analyze the changes that led to the introduction of various policies.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • understand the content of educational policy and sources where to search for the latest educational policies nationally and globally; • build a request for the development of educational policy; • design and implement educational policies; • create monitoring concepts for measuring educational policy; • build relationships with educational policy topics for contextual coordination and adoption.

Course title	Policies and practices in special and vocational education
Component	Subject Component, Optional Component
Cycle	Major disciplines
Module	School development 15 academic credits
Academic credits	5
Course Description/competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for Development of organizational culture • Competence area for Policies and regulations <p>Master students deepen their knowledge in the mechanisms of state regulation of the work of special and professional educational institutions and get acquainted with the best international practices. They investigate the features and differences of formal and non-formal education, as well as methods of their award and transfer . Master students collect</p>

	and use reliable data to drive the change in organizational structures and culture. They develop the abilities of teachers to lead the change together with the management of the organization.
Learning outcomes	<p>Master students demonstrating competence can:</p> <ul style="list-style-type: none"> • analyze legal acts in the field of special and vocational education; • analyze and draw up institutional plans for development and improvement based on regulatory documentation and international experience; • monitor the progress of the educational organization and adapt it to improve the well-being of all participants of the educational process.

Action research 23 academic credits

During the module, Master students explore the theories of research methods and practices, research design, data collection and processing methods for the purpose of the Master dissertation.

Course title	Improving the quality of teaching and learning: Action Research
Component	Subject component, University component
Cycle	Major disciplines
Module	Action Research 23 academic credits
Academic credits	7
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for Action Research • Competence area for Development of organizational culture <p>Master students, as practitioners, develop their self-reflective research skills to systematically monitor the quality of education in social situations and to improve the rationality and fairness of their own practices. Master students expand their competencies in the field of change management and social management.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • apply the action research method in practice in an educational organization;

	<ul style="list-style-type: none"> • carry out micro-studies to assess the quality of teaching and learning by various methods; • understand the improvement of the quality of teaching and learning in their practice as a process based on scientific knowledge; • understand the relationship and sequence of research results and decision-making; • carry out contextual coordination of the results based on their research.
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Course title	Research design, data collection and analysis
Component	Subject component, University component
Cycle	Major disciplines
Module	Action Research 23 academic credits
Academic credits	16
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of subject competence:</p> <ul style="list-style-type: none"> • Competence area for Action Research • Competence area for Development of organizational culture • Competence area for Policies and regulations <p>Master students investigate the methodology of scientific research design and their practical implementation expanding their knowledge about the use of various methods of data collection and analysis. They also explore international and national standards for the design of a research through end-to-end work in groups at seminars.</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 methodological approach; • formulate the methodological approach of a simple empirical research; • apply skills in collaboration and teamwork to the development of a research design; • complete the proposal or scientific and methodological approach of their dissertation.

Research work of a Master student 24 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.

Course title	Research practice
Component	Subject component, University component
Module	Research work of a Master student 24 academic credits
Cycle	Major disciplines
Academic credits	4
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of research competence:</p> <ul style="list-style-type: none"> • Competence area for research <p>During the course, Master students holistically understand the research process. Through research activities they solve problems in new conditions in an interdisciplinary context and cope with the difficulties in changing conditions. They also collect and process quantitative and qualitative data for their dissertation purposes. 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 24 academic credits
Cycle	Major disciplines
Academic credits	20
Course Description/ competencies	<p>The purpose of this course is to improve the following areas of research competence:</p>

	<ul style="list-style-type: none"> • Competence area for research <p>During the course, Master students develop their skills in academic research specific to the level of the master's degree. They analyze the data in an ethical manner and draw conclusions based on the analysis. They also develop their abilities to conduct scientific discussion as well as to present the research results in various forms of oral and written activities to the scientific community as well as to general public.</p>
Learning outcomes	<p>Master students who demonstrate competence, can:</p> <ul style="list-style-type: none"> • carry out research activities within the framework of tasks and scientific topics; • take part in the organization and implementation of scientific and practical conferences, round tables, and discussions; • develop and test diagnostic materials; • present the final results of the study and demonstrate them in the form established by the educational organization.

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, Diploma work, 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			
PEDAGOGICAL ETHICS AND VALUES 15 academic credits				
Value Oriented Leadership 5 academic credits	5			
Introduction to Teaching Leadership 5 academic credits	5			
Assessment of the quality of education 5 academic credits		5		
SUSTAINABLE LEADERSHIP AND ORGANIZATIONAL MANAGEMENT 15 academic credits				
Personnel management 5 academic credits		5		
Infrastructure management and financial management 5 academic credits		5		
Infrastructure management and financial management in organizations of special and professional education 5 academic credits				
Implementation of changes in the structure of the school organization 5 academic credits			5	
Management in special and professional educational organization 5 academic credits				
SCHOOL DEVELOPMENT 15 academic credits				
Formation of school culture and development of professional communities 5 academic credits		5		
International practices in improving the efficiency and			5	

development of the school 5 academic credits				
Education policy and practice 5 academic credits		5		
Policies and practices in special and vocational education 5 academic credits				
ACTION RESEARCH 23 academic credits				
Improving the Quality of Teaching and Learning: Action Research 7 academic credits			7	
Research design, data collection and analysis 16 academic credits			8	8
RESEARCH WORK OF A MASTER STUDENT 24 academic credits				
Research practice 4 academic credits				4
Research work of a Master student 20 academic credits	5	5	5	5
FINAL ATTESTATION (MASTER DISSERTATION) 8 academic credits				
Final Attestation (Master Dissertation) 8 academic credits				8
Academic credits in total	35	30	30	25

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.

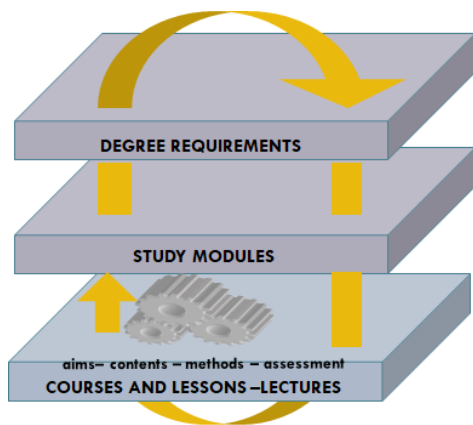
Constructive alignment

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).

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