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WP2: Enhancing Entrepreneurship Education and Skills Development












D 2.1 Report on status quo on entrepreneurship education, labour
market requirements and knowledge/skills mismatches

Kh. Dosmukhamedov Atyrau University, Kazakhstan



Triggering innovative approaches and entrepreneurial skills for students through creating conditions for
graduate's employability in Central Asia

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Table of Contents

1. Introduction	4
2. Overview of current offer in entrepreneurship education at kh. dosmukhamedov atyrau university	5
2.1. Existing entrepreneurship education offer at BA level	5
2.2. Existing entrepreneurship education offer at MA level	8
2.3. Existing entrepreneurship education offer at PhD level	9
2.4. Other activities in entrepreneurship education	9
2.5. National/institutional regulations to implement changes at the course level and to initiate new extra-curricular activities	11
3. Results of the HEInnovate self-assessment for the dimension “Entrepreneurial Teaching and Learning” and “Preparing and Supporting Entrepreneurs”	12
3.1. Dimension “Entrepreneurial Teaching and Learning”	12
3.2. Dimension “Preparing and Supporting Entrepreneurs”	13
4. In-depth survey (employers, alumni)	13
4.1. Dimension “Ideas”	15
4.2. Dimension “Resources”	16
4.3. Dimension “Actions”	20
4.4. Dimension “Digital Skills”	21
4.5. Dimension “Financial Skills”	23
4.6. Dimension “Marketing”	23
4.7. Dimension “Innovation management”	25
5. Identified gaps and skills mismatches	26
6. Conclusions: Steps to further develop entrepreneurship education at the university	29

1. INTRODUCTION

The present report provides an overview of the status quo of entrepreneurship education at Kh. Dosmukhamedov Atyrau University in Kazakhstan and aims to identify related labour market requirements and possible knowledge/skills mismatches of university graduates. The report was developed as part of Work Package 2 on “Enhancing Entrepreneurship Education and Skills Development” (WP2) of the Erasmus+ Capacity Building in Higher Education Project “Triggering innovative approaches and entrepreneurial skills for students through creating conditions for graduate’s employability in Central Asia” (TRIGGER).

The report first provides an overview of the current offer in entrepreneurship education at the university. Second, relevant results of an HEI self-assessment are provided which was conducted based on the HEInnovate¹ tool in WP1.² For the requirements of WP2 the present report specifically looks at the self-assessment findings of the university for the HEInnovate dimensions “Entrepreneurial Teaching and Learning” and “Preparing and Supporting Entrepreneurs”.³ Third, results of a survey among employers and graduates are provided to identify labour market qualification requirements and possible skills mismatches for graduates in the field of entrepreneurial skills. The survey was implemented by the university in spring 2021 as part of WP2. Fourth, a summarizing discussion of the identified gaps and skills mismatches is provided. In sum, the mentioned aspects allow for comprehensive audit of the state of entrepreneurship education at the university. Finally, conclusions for the further development of entrepreneurship education at the university are derived.

Atyrau University trains specialists in 56 educational undergraduate programs, of which:

- Pedagogical Sciences - 20 educational programs
- Arts and Humanities - 12
- Social Sciences, Journalism and Information - 2
- Business, Management and Law - 6
- Natural Sciences, Mathematics and Statistics - 6
- Information and communication technologies - 2
- Engineering, manufacturing and construction industries - 2
- Agriculture and biological resources - 4

¹ For further details see: <https://heinnovate.eu/en>

² For further detail see Deliverable 1.1 on “The Methodology for the Analyses of HEI preparedness for future challenges” of Work Package 1.

³ For further results of the self-assessment along all 8 HEInnovate dimensions see Deliverable 1.2 “The Report on HEI preparedness for future challenges in CA countries” of Work Package 1.

Services – 2

Before digging deeper into the status of entrepreneurship education at the university, this section closes with a summary on the notion of entrepreneurship education as adopted in the TRIGGER project:

- **Entrepreneurship Education (EE)** seeks to provide students with knowledge, skills and motivation to create ideas in entrepreneurial action in different environments, both as self-employed entrepreneur and as employee in established organisations (EC 2015, Lackéus et al. 2020).
- **Entrepreneurship** is a key competence for all learners, supporting personal development, active citizenship, social inclusion and employability (see European Commission et al. 2016: 21).
- **Organizational change** of HEIs is needed, since „the capacity to implement the entrepreneurship and innovation agenda depends on the governance arrangements, organisational capacity and the institutional culture of HEIs as well as characteristics of the surrounding economy“ (OECD 2019: 12).

2. OVERVIEW OF CURRENT OFFER IN ENTREPRENEURSHIP EDUCATION AT KH. DOSMUKHAMEDOV ATYRAU UNIVERSITY

This section provides an overview of the status quo of entrepreneurship education at the university, looking at BA, MA, and PhD levels.

2.1. EXISTING ENTREPRENEURSHIP EDUCATION OFFER AT BA LEVEL

The educational programs in business, management and law include such disciplines as "Fundamentals of Entrepreneurship and Startup Mentor" (5 ECTS), "Business Planning" (5 ECTS), "Entrepreneurial Law" (5 ECTS), "Risks in Entrepreneurship" (5 ECTS), "Innovative Entrepreneurship" (5 ECTS).

In order to form entrepreneurial skills among bachelors, the discipline "Fundamentals of Entrepreneurship and Mentor of Startups" is included in the educational programs. This discipline is aimed at studying the basics of entrepreneurship and attracting students to entrepreneurial activity, instilling modern skills (lean startup, canvas of a business model) necessary for self-development,

personal growth, starting and developing their own business, the ability to find ideas and draw up a business plan for startups, know the process of registering a business entity in accordance with the legislation of the country, have the starting skills of a mentor and work with menti. In the learning process, take part in trainings by famous domestic and foreign lecturers and mentors, confirm with certificates.

The module of basic literacy of an entrepreneur in existing educational programs contains the discipline "Business planning". The purpose of this discipline is to form an understanding of business planning among bachelors as an important direction of the firm's activities, since the plan represents economic activity in the future, and therefore the entrepreneur analyzes the problems and the accompanying risks that will have to be faced in subsequent periods. The objectives of the discipline are: studying the theory and practice of business planning in market conditions, types of business plans and the goals of their development; mastering the logic and methods of drawing up a business plan for an enterprise, developing the ability to measure their production and financial capabilities with market conditions; draw up, adjust plans and monitor their implementation, develop a logical approach to planning, creative and strategic thinking, the ability to achieve goals.

This module also contains the discipline "Business Law", the purpose of which is to instill in students the skills and abilities to provide legal support for entrepreneurial activity. Business law is a set of legal norms governing business relations, other closely related to them, including non-commercial relations, as well as relations on state regulation of entrepreneurial activity.

Also, the existing educational programs contain the discipline "Risks in Entrepreneurship", the purpose of which is a detailed study of tools for analyzing and assessing entrepreneurial risks, mastering the skills of applying practical techniques to reduce risks arising from various natural and unforeseen circumstances.

The discipline "HR-management" contributes to the development in students of the skills of competent management of human resources, aimed at the qualitative achievement of the company's goals, the creation of a strong cohesive team with a certain style of management. The use of human resource management methods of an enterprise affects the value (capitalization) of the company, which occurs due to the growth of intangible assets - personnel policy, brand and the intellectual potential of employees.

In modern conditions of development of scientific and technical progress, the study of the discipline "Innovative Entrepreneurship" at the bachelor's degree has a significant role. The goal of this discipline is to develop students' skills in creating and commercial use of technical and technological

innovations in the field of products or services that allow creating a new market, meeting new needs, being in a constant search for new opportunities, focusing on innovation. The task of the discipline is to educate an entrepreneur in a student who is ready to take all the risk of implementing a new project or improving an existing one, as well as the resulting financial, moral and social responsibility.

The Ministry of Education and Science of the Republic of Kazakhstan, together with the National Chamber of Entrepreneurs "Atameken", within the framework of the implementation of the state task in order to stimulate entrepreneurial activity of the younger generation within the framework of the Roadmap for the Year of Youth, from September to November 2019 trained 21 teachers of the Faculty of Economics and Law ... The teachers have received a certificate of business trainers. In 2019 alone, business trainers taught 1617 3-4 year students the basics of entrepreneurship. In total, 36 elective hours were allocated for the new elective discipline during that period.

Today, this discipline under the title "Fundamentals of Entrepreneurship and Startup Mentor" is included in educational programs in other non-economic areas of training as an elective discipline in the amount of 5 ECTS.

The discipline provides for the study of the basics of doing business, marketing, business projects in demand today, the definition of taxation regimes and other topical business topics. A distinctive feature of the discipline is that it is taught in a playful way, and the lessons are based on real business cases of Kazakhstani companies. The final result of training in the discipline "Fundamentals of Entrepreneurship and Startup Mentor" is the creation and protection of a startup project.

Statistics show that this course is chosen by half of the university students, mostly students in the field of training "Natural Sciences, Mathematics and Statistics", "Information and Communication Technologies", "Engineering, Manufacturing and Construction Industries" and "Services".

As extracurricular activities for the development of entrepreneurial skills, it is proposed that students participate in intra-university, republican and international competitions of start-up projects, for example, Menin Armanym, conducting field trips to the leading enterprises of the city, where students get acquainted with the realities of doing business. Also, students participate in master classes organized at enterprises by the best entrepreneurs of the Atyrau region, as well as domestic and foreign business representatives.

Mobile university-enterprise schemes are being practiced, intended for the exchange of experience and knowledge between the business world and the university environment (for example, teaching exchange, students' industrial practice).

2.2. EXISTING ENTREPRENEURSHIP EDUCATION OFFER AT MA LEVEL

Existing master's degree programs in economic areas offer a full range of disciplines that teach entrepreneurship. In particular, such disciplines as "Business planning of innovative projects", "Analysis of entrepreneurial risks", "Modern methods of analysis and diagnostics of bankruptcy", "Economic security of the company", "Business intelligence software", "Digital business strategies and e-commerce technologies".

"Business planning of innovative projects". The purpose of the discipline is the mastering of theoretical knowledge by undergraduates on the basics of planning business projects, as well as acquiring practical skills in developing a program for creating and launching an innovative product, drawing up a business plan for an innovative project to increase the efficiency of production of new highly competitive types of goods and services, based on the use of achievements of science and technology.

A master student who has mastered this discipline should know the answers to such questions of a potential investor as: how capacious, profitable in terms of market conditions and prospects is the sales market of the proposed product or service, what is the investment efficiency of the project in comparison with the usual, how satisfactory in terms of price and quality is the chosen one. business plan, the resource market, how important and what are the competitive advantages of the new enterprise and its product, what are the technical and commercial risks of the enterprise (project), how much funds, when, in what form is required from the venture investor, how thoughtful is the maximization of profits from the attracted start-up investment.

"Business risk analysis". The purpose of the discipline is to study the problems of entrepreneurship risks, the possibility of risky situations. The objectives of the discipline are: the study of methods of diagnosis and successful resolution of risky situations in the modern market; study of the organizational aspects of managing entrepreneurial risks, in particular financial; participation of undergraduates in the development of design solutions in entrepreneurial activity, preparation of proposals and measures for the implementation of anti-crisis programs in uncertain conditions.

"Modern methods of analysis and diagnostics of bankruptcy." The purpose of the discipline: to provide scientific, theoretical and practical training of future business analysts from the standpoint of a systematic approach to assessing and preventing the likelihood of bankruptcy of various economic entities; to expand and deepen their knowledge in the field of application of internationally recognized standards of financial analysis. Objectives: to study the achievements of various scientific schools in the field of bankruptcy analysis and apply them in practice; consider various business situations that

arise in the practice of companies, associated with the choice of alternative financial solutions and requiring the use of appropriate regulatory documents and methods of K-predictive analysis.

"Economic security of the company." The objectives of the course are: studying the activities of the company and its economic security; instilling the ability to analyze modern economic phenomena against the background of the problems of the domestic market and draw well-grounded conclusions on this basis; mastering practical skills for solving economic problems of individual economic entities; awakening research interest among undergraduates in various controversial issues in the field of ensuring economic security.

"Business Intelligence Software". The purpose of the discipline is to study business intelligence software and the formation of a system analyst with knowledge and skills of information technology. The objectives of the discipline are to study the requirements for key competencies of a systems analyst, identify and compare the competencies most in demand for an economist-analyst with competencies that are formed in the process of training in a specialty.

"Digital business strategies and e-commerce technologies." Purpose: formation of undergraduates' ideas about the possibilities of e-commerce. The objectives of the discipline are: mastering the theoretical foundations of e-commerce and practical skills in using its technologies in the consumer market and in the processes of inter-firm interaction; study of the features of e-commerce in the consumer market for goods and services.

2.3. EXISTING ENTREPRENEURSHIP EDUCATION OFFER AT PHD LEVEL

Atyrau University does not provide PhD training. The preparation of documents for inclusion in the register of new educational programs in the areas of training "Economics", "Mathematics", "Ecology", "Pedagogy".

2.4. OTHER ACTIVITIES IN ENTREPRENEURSHIP EDUCATION

Kh. Dosmukhamedov Atyrau University has a business incubator and coworking center I-SPACE, where business ideas can be brought to life using best business incubation practices that meet the needs of entrepreneurs. I-SPACE motivates entrepreneurial individuals from diverse communities to develop their business plans and effectively launch their companies through a variety of specialized programs. I-SPACE and its partner organizations provide consulting support, mentoring, and training to young entrepreneurial students and individuals.

The main functions of the Business Incubator:

- Providing business teams of the incubator with comprehensive consulting and information services on legislation, entrepreneurship, innovation, intellectual property protection, taxation, lending, investments and other issues;
- Organization of conferences, exhibitions, seminars on organizational, economic and legal issues of entrepreneurship in the scientific and technical sphere, including with international participation;
- Assistance in attracting investments for research and development projects of students and young scientists of the University and commercialization of their results;
- Implementation of the transfer of university technologies to small and medium-sized businesses;
- Promotion of small business among students, undergraduates, teaching staff and the general population of the city and region;
- Organization of interactive courses for youth on the development of business projects.

Students of Kh. Dosmukhamedov Atyrau University have the opportunity to take a program for higher educational institutions for the development of entrepreneurship Creative Spark – is a five-year initiative (2018-2023) aimed at supporting partnerships between universities and institutions with the UK to develop entrepreneurial skills and skills among students and young entrepreneurs in seven countries: Ukraine, Central Asia (Kazakhstan, Uzbekistan, Kyrgyzstan) and the South Caucasus (Azerbaijan, Armenia, Georgia).

The program was developed in response to the demand for entrepreneurship training in these countries. In reviewing the successful track record of stimulating economic growth by the creative industries in the UK, the British Council wants to draw on this experience and expertise.

The program includes three key elements:

1. Develop partnerships between universities and creative institutions in the United Kingdom and the countries participating in the program to support entrepreneurial skills training and create entrepreneurship hubs.
2. Development of entrepreneurship curricula for students and creative entrepreneurs, which will include topics such as pitching ideas, starting a business, protecting intellectual property and obtaining loans.
3. Teaching English by providing access to digital learning resources including learning platforms, online courses and massive open distance learning courses with an emphasis on English for entrepreneurs.

2.5. NATIONAL/INSTITUTIONAL REGULATIONS TO IMPLEMENT CHANGES AT THE COURSE LEVEL AND TO INITIATE NEW EXTRA-CURRICULAR ACTIVITIES

In connection with the transition to a non-profit joint-stock company in 2020, the university received academic and managerial freedom in its activities, which allows it to independently determine the vector of development of the university, develop our own educational programs.

The state educational standard defines only 20% of compulsory disciplines, the remaining 80% of disciplines in the educational program are determined by the university independently.

At the institutional level

If the department has decided to make changes to training courses and / or initiate new courses in educational programs for which it trains personnel, then all these actions are decided at the department itself. If one department initiates the inclusion of a new curriculum in other educational programs not related to it, then:

- first of all, it is consistent between departments
- secondly, the initiating department brings this issue to the meeting of the educational and methodological council of the university

The implementation of changes in the curriculum is discussed at a meeting of the department.

At the national level

Educational programs and courses must be agreed with employers.

3. RESULTS OF THE HEINNOVATE SELF-ASSESSMENT FOR THE DIMENSION “ENTREPRENEURIAL TEACHING AND LEARNING” AND “PREPARING AND SUPPORTING ENTREPRENEURS”

As part of WP1 Kh. Dosmukhamedov Atyrau University self-assessment was conducted based on the HEInnovate tool. For the requirements of WP2 this section specifically looks at the self-assessment results of the university for the HEInnovate dimensions “Entrepreneurial Teaching and Learning” and “Preparing and Supporting Entrepreneurs”.⁴

3.1. DIMENSION “ENTREPRENEURIAL TEACHING AND LEARNING”

According to the survey results and the D1.2 report on the preparedness of universities for future challenges for the measurement of "Entrepreneurial Teaching and Learning", it can be concluded that entrepreneurship education and trainings conducted at the university provide an opportunity to get acquainted with entrepreneurial experience and acquire skills and competencies for the development of entrepreneurial thinking. The University provides a range of learning opportunities that foster innovative teaching and learning. The University is carrying out a number of activities aimed at stimulating the use of various innovative approaches in teaching. The university has a center of competence, retraining and career planning that promotes additional non-formal education. The university, together with external stakeholders, develops and implements curricula that can be used in entrepreneurship education. The university regularly engages with stakeholders to understand future skill needs.

Measures that should be taken by Kh. Dosmukhamedov Atyrau University:

1. Organize networking events between students and entrepreneurs / businesses
2. Maintain a variety of collaborative partnerships with local communities and organizations, local and regional governments, chambers of commerce, industry and alumni.
3. Provide support and training to employees to create a new entrepreneurship-related curriculum
4. Involve students in competitions of business ideas / plans as part of their further education.

⁴ For further results of the self-assessment along all 8 HEInnovate dimensions see Deliverable 1.2 “The Report on HEI preparedness for future challenges in CA countries” of Work Package 1.

5. Use the experience and knowledge of stakeholders in the development and implementation of extracurricular and additional events

3.2. DIMENSION “PREPARING AND SUPPORTING ENTREPRENEURS”

The university raises awareness of the value of entrepreneurship and encourages the entrepreneurial intentions of students, alumni and employees to create a business or venture. The University uses a variety of communication channels to raise awareness of opportunities and showcase entrepreneurship among staff and students in all parts of the institution.

The university supports students in preparing for a startup, such as developing an idea, finding a team, and exploring the technical and market aspects of project implementation. And conducts activities to generate and evaluate business ideas. The university has a peer mentoring platform where aspiring entrepreneurs can get advice and develop their business networks. The business incubator provides a wide range of services, from the development of ideas to their commercialization, innovative projects and the organization of the educational process in the field of entrepreneurship at the university. They also offer prospective entrepreneurs an affordable place to access a comprehensive coaching, mentoring and training package.

Measures that should be taken by Kh.Dosmukhamedov Atyrau University:

1. Celebrate and recognize the success of students, alumni, and full-time entrepreneurs.
2. Introduce mechanisms to increase the number of users in different groups
3. Provide students with the opportunity to participate in research projects that open up opportunities for entrepreneurship and to undertake internships with entrepreneurs.
4. Provide assistance in the field of intellectual property for potential startups
5. Create an expert advisory group for early stage ideas
6. Actively involve students and staff in training activities and monitor the level of engagement.
7. Engage entrepreneurs and key players in the entrepreneurial ecosystem.
8. Use modern teaching methods focused on hands-on learning and critical thinking.

4. IN-DEPTH SURVEY (EMPLOYERS, ALUMNI)

As part of WP2 the university conducted a survey among employers and graduates to identify labour market qualification requirements and possible skills mismatches for graduates in the field of entrepreneurial skills.

In this chapter, results from the online survey of employers and alumni are presented. The rationale of the survey was to identify the skills gaps in terms of skills needed and the actual skills state of university graduates as perceived by companies and alumni.

The survey was conducted in May and June 2021. Each TRIGGER partner in Kazakhstan, Uzbekistan and Tajikistan distributed the same questionnaire independently in order to gain comparable data. The questionnaire was developed based on the Entrepreneurship Competence Framework⁵ and other studies on entrepreneurship.⁶

In total, the questionnaire comprised 130 items on three EntreComp dimensions „Ideas“, „Resources“ and Actions“ and in four dimensions on „Digital Skills“, „Financial Skills“, „Marketing Skills“ and „Skills in Innovation Management“, plus 8 questions on demographic variables, such as position of the survey participant in the company, company size, and sector of company/professional activity. All items were presented with a five-point Likert scale anchored with 1 = not at all important to 5 = very important.

⁵ Bacigalupo M., Kamylyis P., Punie Y. and Van Den Brande L. (2016) EntreComp: The Entrepreneurship Competence Framework. Luxembourg (Luxembourg): Publications Office of the European Union; Online: <https://publications.jrc.ec.europa.eu/repository/handle/JRC101581> (accessed 2021-02-02).

⁶ The dimension on „Digital Skills“ was developed from Carretero, S. / Vuorikari, R. / Punie, Y. (2017). DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use, doi:10.2760/38842; the further dimensions were built on Loué, C. & Baronet, J. (2012) Toward a new entrepreneurial skills and competencies framework: a qualitative and quantitative study. In: International Journal of Entrepreneurship and Small Business, Vol. 17, No. 4, pp. 455-477.

4.1. DIMENSION “IDEAS”

Items	Employer						Alumni					
	N	Importance		Graduate level		I ± GL	N	Importance		Graduate level		I ± GL
		Mean	SD	Mean	SD			Mean	SD	Mean	SD	
Identifying, creating and seizing opportunities.	22	3,6	0,7	3,3	0,9	-0,3	24	4,1	0,9	3,8	0,9	-0,3
Uncovering the needs of customers and other stakeholders.	22	4,1	0,9	3,5	0,9	-0,6	24	4,2	0,8	3,8	1,0	-0,4
Analysing the contexts where value can be created.	22	3,8	0,9	3,5	0,9	-0,3	24	4,0	0,9	3,7	1,0	-0,3
Developing ideas and opportunities to create value.	22	4,1	0,8	3,3	0,8	-0,9	24	4,0	1,0	3,7	1,0	-0,3
Developing better solutions to existing and new challenges.	22	4,1	0,9	3,5	0,9	-0,7	24	4,2	0,9	3,8	1,0	-0,5
Exploring and experiment with innovative approaches.	22	4,0	0,9	3,4	0,7	-0,6	24	4,0	1,0	3,7	1,0	-0,3
Developing a vision to turn ideas into action.	22	4,0	0,7	3,6	0,7	-0,4	24	4,1	1,2	3,5	1,1	-0,5
Judging what value is in social, cultural and economic terms.	22	3,6	0,9	3,5	0,6	-0,1	24	4,0	1,1	3,7	0,9	-0,3
Recognising the potential an idea has for creating value.	22	3,7	0,8	3,6	0,5	-0,1	24	4,0	1,1	3,8	0,9	-0,2
Identifying suitable ways of making the most out new ideas.	22	4,0	0,8	3,3	0,8	-0,7	24	4,1	1,0	3,5	1,0	-0,6

Assessing the consequences of ideas that bring value on the target community, the market, society and the environment.	22	3,9	0,7	3,6	0,7	-0,3	24	3,9	1,2	3,9	0,8	0,0
Reflecting on how sustainable long-term social, cultural and economic goals are.	22	3,5	1,0	3,5	0,7	0,0	24	4,1	1,0	3,8	0,9	-0,4
Acting responsible.	22	4,5	0,9	4,1	0,9	-0,3	24	4,1	1,1	4,0	1,0	-0,1

Employers prioritize Acting Responsible (4.5) skills, while graduates think differently and prioritize Uncovering the needs of customers and other stakeholders (4.2) and Developing better solutions to existing and new challenges (4.2).

Employers believe that the actual level of graduates in the «Idea» part is much lower in the following skills:

- Developing ideas and opportunities to create value – by 0,9
- Developing better solutions to existing and new challenges – by 0,7
- Identifying suitable ways of making the most out new ideas – by 0,7
- Uncovering the needs of customers and other stakeholders – by 0,6
- Exploring and experiment with innovative approaches – by 0,6

Graduates find that their actual level in the Idea part is much lower in the following skills:

- Identifying suitable ways of making the most out new ideas –by 0,6

This difference in the importance of competencies for employers and the presence of low competencies among university graduates gives us reason to think about revising academic disciplines, the study of which leads to the formation of the above competencies.

4.2. DIMENSION “RESOURCES”

Items	Employer			Alumni		
	Importance	Graduate level	I ± GL	Importance	Graduate level	I ± GL

	N	Mean	SD	Mean	SD		N	Mean	SD	Mean	SD	
Reflecting on your needs, aspirations and wants in the short, medium and long term.	22	3,5	0,9	3,3	0,6	-0,1	24	3,9	1,1	3,8	0,8	-0,1
Identifying and assess one's own individual and group strengths and weaknesses.	22	3,8	0,9	3,5	0,7	-0,3	24	4,1	1,0	3,8	1,0	-0,3
Believing in one's own ability to influence the course of events, despite uncertainty, setbacks and temporary failures.	22	3,7	0,9	3,9	0,9	0,1	24	4,0	1,0	3,9	0,8	-0,1
Being determined to turn ideas into action and satisfy one's own need to achieve.	22	4,0	0,8	3,5	0,9	-0,5	24	4,1	1,1	3,9	0,8	-0,2
Being prepared to be patient and keep trying to achieve long-term individual or group aims.	22	3,9	0,8	3,4	1,0	-0,5	24	3,8	1,0	3,8	0,8	0,0
Being resilient under pressure, adversity, and temporary failure	22	4,0	0,8	3,5	0,7	-0,6	24	4,0	1,1	3,7	0,9	-0,3
Getting and managing the material, non-material and digital resources needed to turn ideas into action	22	3,7	0,9	3,4	0,8	-0,4	24	4,1	0,9	3,8	0,9	-0,3
Making the most of limited resources	22	3,7	0,9	3,2	1,0	-0,5	24	4,0	1,1	3,8	0,9	-0,2
Getting and managing the competences needed at any	22	3,8	1,0	3,4	0,9	-0,4	24	4,0	1,0	3,8	1,0	-0,2

stage, including technical, legal, tax and digital competences through suitable partnerships, networking, outsourcing and crowd-sourcing												
Estimating the cost of turning an idea into a value-creating activity	22	3,9	0,9	3,5	0,7	-0,4	24	4,1	1,0	3,7	1,0	-0,4
Planning, putting in place and evaluating financial decisions over time	22	3,8	0,8	3,5	0,9	-0,3	24	4,1	1,1	3,7	0,9	-0,4
Managing financing to make sure my value-creating activity can last over the long term	22	4,0	0,9	3,4	0,9	-0,6	24	4,1	0,9	3,7	0,9	-0,4
Inspiring and enthusing relevant stakeholders	22	3,4	0,8	3,5	0,7	0,2	24	3,9	1,0	3,8	0,9	-0,1
Getting the support needed to achieve valuable outcomes	22	3,6	0,8	3,7	0,7	0,1	24	4,1	0,9	3,8	0,8	-0,3
Demonstrating effective communication, persuasion and negotiation	22	4,0	0,8	3,8	0,9	-0,2	24	4,1	1,0	3,8	0,9	-0,3
Demonstrating effective leadership	22	3,9	0,9	3,5	1,0	-0,4	24	4,1	1,1	3,8	0,9	-0,3

Employers rank skills according to Being determined to turn ideas into action and satisfy one's own need to achieve (4.0), Being resilient under pressure, adversity, and temporary failure (4.0), Managing financing to make sure my value-creating activity can last over the long term (4.0) and Demonstrating effective communication, persuasion and negotiation (4.0).

Employers find that the actual graduate level in the Resources part is much lower in the following skills:

- Managing financing to make sure my value-creating activity can last over the long term – by 0,6
- Being resilient under pressure, adversity, and temporary failure – by 0,6

Graduates, on the other hand, believe that their actual level in the "Resources" part corresponds to the received ones.

4.3. DIMENSION “ACTIONS”

Items	Employer						Alumni					
	N	Importance		Graduate level		I ± GL	N	Importance		Graduate level		I ± GL
		Mean	SD	Mean	SD			Mean	SD	Mean	SD	
Initiating processes that create value.	22	3,5	0,7	3,5	0,7	0,0	24	3,9	0,9	3,7	0,9	-0,2
Taking up challenges.	22	3,6	0,7	3,7	0,8	0,1	24	3,9	1,0	3,8	1,0	-0,1
Acting and working independently to achieve goals, stick to intentions and carry out planned tasks.	22	3,8	0,8	3,8	0,9	0,0	24	4,0	1,0	3,8	0,9	-0,2
Setting long-, medium- and short-term goals.	22	4,0	0,8	3,7	0,8	-0,3	24	4,0	1,0	3,8	0,9	-0,2
Defining priorities and action plans.	22	3,8	0,8	3,7	0,8	-0,1	24	4,0	1,0	3,8	1,1	-0,2
Adapting to unforeseen changes.	22	3,9	0,9	3,7	0,9	-0,2	24	3,9	1,2	3,8	1,0	-0,1
Making decisions when the result of that decision is uncertain, when the information available is partial or ambiguous, or when there is a risk of unintended outcomes.	22	3,9	0,8	3,5	0,9	-0,4	24	3,9	1,1	3,8	1,0	-0,1
Testing ideas and prototypes from the early stages to reduce risks of failing.	22	3,6	1,0	3,6	0,9	0,0	24	3,8	1,1	3,8	0,9	0,0
Handling fast-moving situations promptly and flexibly.	22	4,2	0,7	3,8	1,0	-0,4	24	3,8	1,1	3,8	1,0	0,0

Working together and cooperate with others to develop ideas and turn them into action.	22	4,1	0,9	3,9	0,8	-0,2	24	4,0	0,9	3,7	0,9	-0,3
Networking with others to organise skills and expertise needed for goal attainment.	22	4,2	0,7	3,9	0,7	-0,3	24	4,0	1,0	3,7	1,0	-0,3
Solving conflicts and facing up to competition positively when necessary.	22	4,0	0,9	3,8	0,9	-0,2	24	4,0	1,0	3,7	1,0	-0,3
Using any initiative for value creation as a learning opportunity.	22	4,0	1,0	3,7	0,8	-0,3	24	4,1	1,0	3,8	0,9	-0,3
Learning with others, including peers and mentors.	22	4,0	0,9	3,9	0,9	-0,1	24	4,1	0,9	3,8	0,8	-0,3
Reflecting and learning from both success and failure (your own and other people's).	22	3,4	1,0	3,7	0,7	0,3	24	4,1	1,0	3,7	0,9	-0,4

In general, there is no difference between the employers' assessments and the graduates' assessments in relation to the actual level of graduates' skills.

4.4. DIMENSION “DIGITAL SKILLS”

Items	Employer					Alumni						
	N	Importance		Graduate level		I ± GL	N	Importance		Graduate level		I ± GL
		M	S	Me	S			M	S	Me	S	
		a	D	an	D		a	D	ean	D		
		n					n		n			

Using data and information from digital environments to assess the potential of ideas.	22	3,5	0,9	3,5	0,8	0,0	24	4,0	1,0	3,8	0,8	-0,2
Deploying digital media, apps or web-based tools for marketing.	22	3,6	0,8	3,6	0,8	0,0	24	4,2	1,0	3,8	0,8	-0,4
Using knowledge on automation and artificial intelligence for improving products, processes and services	22	3,5	0,9	3,7	0,8	0,2	24	4,0	1,1	3,8	0,9	-0,2
Understanding and using information from the web and other digital sources to identify customer needs.	22	3,6	1,0	3,8	0,8	0,2	24	4,0	1,0	3,9	0,9	-0,1
Using software apps and digital tools for managing collaboration with teams and partners.	22	3,8	0,8	3,8	0,9	0,0	24	4,0	1,0	3,8	0,8	-0,2

In general, there is no difference between employers' and graduates' assessments in relation to the actual skill level of graduates.

4.5. DIMENSION “FINANCIAL SKILLS”

Items	Employer						Alumni					
	N	Importance		Graduate level		I ± GL	N	Importance		Graduate level		I ± GL
		M	S	Me	S			M	S	Mean	S	
Knowing how to read and analyse a balance sheet.	22	3,9	0,8	3,6	0,8	-0,3	24	4,1	1,0	3,8	0,9	-0,3
Drawing conclusions and deriving potential courses of action from balance sheets.	22	3,6	1,0	3,8	0,9	0,2	24	4,1	1,1	3,7	1,0	-0,4
Managing cash flow.	22	4,0	0,9	3,6	0,9	-0,4	24	4,0	1,0	3,8	0,9	-0,2
Identifying and meeting the organization’s financial needs in the short and long term	22	3,9	0,8	3,6	0,8	-0,3	24	4,1	1,0	3,5	1,1	-0,6
Calculating costs, cost prices, and margins	22	4,1	0,9	3,8	1,0	-0,3	24	3,9	1,1	3,7	1,1	-0,2

In general, there is no difference between employers' and graduates' assessments in relation to the actual skill level of graduates.

Graduates find that their actual level in Financial Skills is much lower in the following skills:

- Identifying and meeting the organization’s financial needs in the short and long term – by 0,6

4.6. DIMENSION “MARKETING”

Items	Employer						Alumni					
	N	Importance		Graduate level		I ± GL	N	Importance		Graduate level		I ± GL
		M	S	Me	S			M	S	Mean	S	

		a						a				
		n						n				
Deploying sales arguments with a view to persuading clients to buy.	22	4,1	1,0	3,4	0,7	-0,7	24	3,8	1,0	3,6	0,9	-0,2
Negotiating while using specific techniques	22	3,9	0,8	3,4	1,0	-0,5	24	3,9	1,1	3,5	1,1	-0,4
Developing commercial strategies and means whereby to attract new clients	22	4,1	0,8	3,5	1,1	-0,6	24	4,2	1,0	3,7	1,0	-0,5
Using specific techniques to encourage client loyalty.	22	3,6	0,8	3,5	0,8	-0,1	24	3,9	1,0	3,6	1,0	-0,3
Creating a positive image of the firm, promoting an ethical image of the firm.	22	4,1	0,9	3,9	1,0	-0,2	24	4,4	0,9	3,7	1,0	-0,7
Building relationships of trust with clients and partners	22	4,5	0,8	3,8	1,0	-0,7	24	4,4	0,9	3,9	1,1	-0,5

Both alumni and employers agree that Building relationships of trust with clients and partners are important skills.

Employers believe that graduates have less knowledge in such skills as:

Deploying sales arguments with a view to persuading clients to buy – by 0,7

Building relationships of trust with clients and partners – by 0,7

Developing commercial strategies and means whereby to attract new clients – by 0,6

Graduates believe that they lack such a skill as Creating a positive image of the firm, promoting an ethical image of the firm - it is less by 0.7.

4.7. DIMENSION “INNOVATION MANAGEMENT”

Items	Employer						Alumni					
	N	Importance		Graduate level		I ± GL	N	Importance		Graduate level		I ± GL
		Mean	SD	Mean	SD			Mean	SD			
Developing innovation strategies.	22	3,3	0,8	3,5	0,8	0,2	24	3,9	1,0	3,5	0,9	-0,4
Analysing the market potentials of ideas and concepts for new products, processes and services.	22	3,2	0,8	3,8	0,9	-0,6	24	4,0	0,9	3,7	0,9	-0,3
Planning, implementing and controlling innovation processes with project management methods	22	3,1	0,9	3,6	0,8	0,5	24	4,0	1,0	3,7	0,8	-0,3
Selecting and applying methods for exchange of ideas and knowledge in the innovation process.	22	3,2	0,9	3,5	0,8	0,3	24	3,9	1,1	3,5	0,9	-0,4
Managing collaboration between customers, suppliers and development partners in the innovation process.	22	3,4	0,9	3,7	0,8	0,3	24	4,0	1,0	3,7	0,8	-0,3

Employers believe that graduates have less knowledge in such skills as:

Analysing the market potentials of ideas and concepts for new products, processes and services – by 0,6

Graduates, on the other hand, believe that their actual level in the "Innovation Management" part corresponds to the received ones.

5. IDENTIFIED GAPS AND SKILLS MISMATCHES

The analysis carried out showed the following results, which are reflected in the summary table below. In the Idea parameter both employers and alumni agreed on the lack of skills in uncovering the needs of customers and other stakeholders, developing better solutions to existing and new challenges, also a vision to turn ideas into action and identifying suitable ways of making the most out of new ideas. At the same time only employers mentioned gaps in developing ideas and opportunities to create value and exploring and experiment with innovative approaches, whereas alumni noted reflecting on how sustainable long-term social, cultural and economic goals are.

The parameter where the most number of gaps mentioned in general is the Resources parameter, where both employer and alumni noticed that the weak items are estimating the cost of turning an idea into a value-creating activity, managing financing to make sure my value-creating activity can last over the long term. Moreover, the gaps mentioned only by employers are being determined to turn ideas into action and satisfy one's own need to achieve, being prepared to be patient and keep trying to achieve long-term individual or group aims, being resilient under pressure, adversity, and temporary failure, getting and managing the material, non-material and digital resources needed to turn ideas into action, making the most limited resources, getting and managing the competences needed at any stage, including technical, legal, tax and digital competences through suitable partnerships, networking, outsourcing and crowd-sourcing, demonstrating effective leadership. And planning, putting in place and evaluating financial decisions over time is mentioned only by alumni.

Next parameters Actions, Digital skills and Financial skills do not have general rated items both by employers and alumni. So, for example, in Actions employers mentioned making decisions when the result of that decision is uncertain, when the information available is partial or ambiguous, or when there is a risk of unintended outcomes and handling fast-moving situations promptly and flexibly as the gaps, whereas the alumni mentioned only reflecting and learning from both success and failure (your own and other people's). And in Digital skills only alumni noticed as a weak item deploying digital media, apps or web-based tools for marketing. As for Financial skills employers showed managing cash flow as the gap and alumni showed drawing conclusions and deriving potential courses of action from balance sheets, identifying and meeting the organization's financial needs in the short and long term. In Marketing parameter 3 items were mentioned as skills mismatches. They are negotiating while using specific technique; developing commercial strategies and means whereby to attract new clients and building relationships of trust with clients and partners. At the same time only employers marked

deploying sales arguments with a view to persuading clients to buy, and only alumni creating a positive image of the firm, promoting an ethical image of the firm as the skills mismatches.

And as for the last parameter innovation management there is also no general items. And employers showed analyzing the market potentials of ideas and concepts for new products, processes and services as the gap, whereas alumni mentioned developing innovation strategies and selecting and applying methods for exchange of ideas and knowledge in the innovation process to be the weak point.

TABLE 1: SKILLS GAPS AS RATED BY EMPLOYERS AND ALUMNI

Main dimensions of competencies	rated as skills gap by employer and alumni	rated skills gap by employers	rated skills gap by alumni
1. Ideas	<ul style="list-style-type: none"> - Uncovering the needs of customers and other stakeholders - Developing better solutions to existing and new challenges - Developing a vision to turn ideas into action - Identifying suitable ways of making the most out new ideas 	<ul style="list-style-type: none"> - Developing ideas and opportunities to create value - Exploring and experiment with innovative approaches 	<ul style="list-style-type: none"> - Reflecting on how sustainable long-term social, cultural and economic goals are.
2. Resources	<ul style="list-style-type: none"> - Estimating the cost of turning an idea into a value-creating activity - Managing financing to make sure my value-creating activity can last over the long term 	<ul style="list-style-type: none"> - Being determined to turn ideas into action and satisfy one's own need to achieve. - Being prepared to be patient and keep trying to achieve long-term individual or group aims. - Being resilient under pressure, adversity, and temporary failure - Getting and managing the material, non-material and 	<ul style="list-style-type: none"> - Planning, putting in place and evaluating financial decisions over time

		<p>digital resources needed to turn ideas into action</p> <ul style="list-style-type: none"> - Making the most limited resources - Getting and managing the competences needed at any stage, including technical, legal, tax and digital competences through suitable partnerships, networking, outsourcing and crowd-sourcing - Demonstrating effective leadership 	
3. Actions	-	<ul style="list-style-type: none"> - Making decisions when the result of that decision is uncertain, when the information available is partial or ambiguous, or when there is a risk of unintended outcomes. - Handling fast-moving situations promptly and flexibly. 	<ul style="list-style-type: none"> - Reflecting and learning from both success and failure (your own and other people's).
4. Digital skills	-	-	<ul style="list-style-type: none"> - Deploying digital media, apps or web-based tools for marketing.
5. Financial skills	-	<ul style="list-style-type: none"> - Managing cash flow 	<ul style="list-style-type: none"> - Drawing conclusions and deriving potential courses of action from balance sheets. - Identifying and meeting the organization's financial needs in the short and long term

6. Marketing	<ul style="list-style-type: none"> - Negotiating while using specific technique - Developing commercial strategies and means whereby to attract new clients - Building relationships of trust with clients and partners 	<ul style="list-style-type: none"> - Deploying sales arguments with a view to persuading clients to buy 	<ul style="list-style-type: none"> - Creating a positive image of the firm, promoting an ethical image of the firm
7. Innovation Management	-	<ul style="list-style-type: none"> - Analysing the market potentials of ideas and concepts for new products, processes and services 	<ul style="list-style-type: none"> - Developing innovation strategies - Selecting and applying methods for exchange of ideas and knowledge in the innovation process.

6. CONCLUSIONS: STEPS TO FURTHER DEVELOP ENTREPRENEURSHIP EDUCATION AT THE UNIVERSITY

The main steps that the university intends to take to further develop entrepreneurship education at the university.

- What curricula are appropriate for incorporating more entrepreneurship skills into their curricula?
 To include more entrepreneurial skills, all economic specialties at the university are suitable, and it also seems appropriate to include it as an additional module in the existing discipline "Fundamentals of Entrepreneurship and Mentor of Startups" for students of non-economic specialties.
- What specific courses could be developed further in terms of entrepreneurship integration?
 It seems expedient to develop and include separate disciplines "Open Innovation" and "Relationship Marketing" in the curricula in all economic specialties.

It is planned to revise the academic disciplines "Marketing", "Business planning", "Fundamentals of entrepreneurship and mentor of startups", "Management decision making", "Financial Management", "Strategic Management", attracting practitioners to teach these disciplines.

The results of the survey prompts to revise the content of the academic disciplines "Management", "Psychology", as well as to develop short-term courses on the formation of the above competencies, which should be organized by the Center for Competence and Career Planning of University graduates.

Besides, it is planned to revise the content of the discipline "Innovation Management", to strengthen it in terms of in-depth study and analysis of the market potential of ideas and concepts for new products, processes and services.

- What needs to be done to integrate these skills into curricula and courses?

To integrate these skills into curricula, it is necessary:

- to develop courses with the participation of employers;
- to include in the curriculum, having previously discussed at the department.

- Who is needed to achieve these goals?

This requires teachers and employers with the competencies and skills.

According to the qualification requirements for educational programs established by the Ministry of Education and Science of the Republic of Kazakhstan, starting from 2021, the teaching staff should also include practical teachers from production. For educational programs in finance, accounting and auditing, the proportion of practitioners should be 20% of the total number of full-time teachers. And for educational programs in the field of jurisprudence - 50%.

In general, it should be noted that enterprises do not always get a ready-made specialist with the desired set of competencies. These are the risks of the enterprise. The initial investment in a specialist is an investment in his development and increasing the value of knowledge.

Enterprises can, for example, offer internships to students, thereby giving them the opportunity to develop and gain experience in their chosen field as early as possible, without waiting for their senior year or graduation from university.

According to independent experts, up to 90% of Kazakhstani companies experience a great shortage of qualified and motivated personnel. And the problem is only aggravating. And the more

complex and modern the industry, the more acute the situation. The reason is very simple - there are almost no "ready specialists" on the market.

It is obvious that a certain set of skills of applicants is important for the employer, which today is "scarce", and most employees simply lack the perfect combination of skills and competencies to achieve the desired result. Thus, we see that the economic efficiency and financial success of the company is only a consequence of the degree to which the level of competence of each employee is formed, in particular, the managerial competence of the management team. And universities in this chain play the first and key role.

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