



# FORUM



13<sup>th</sup> of October 2023

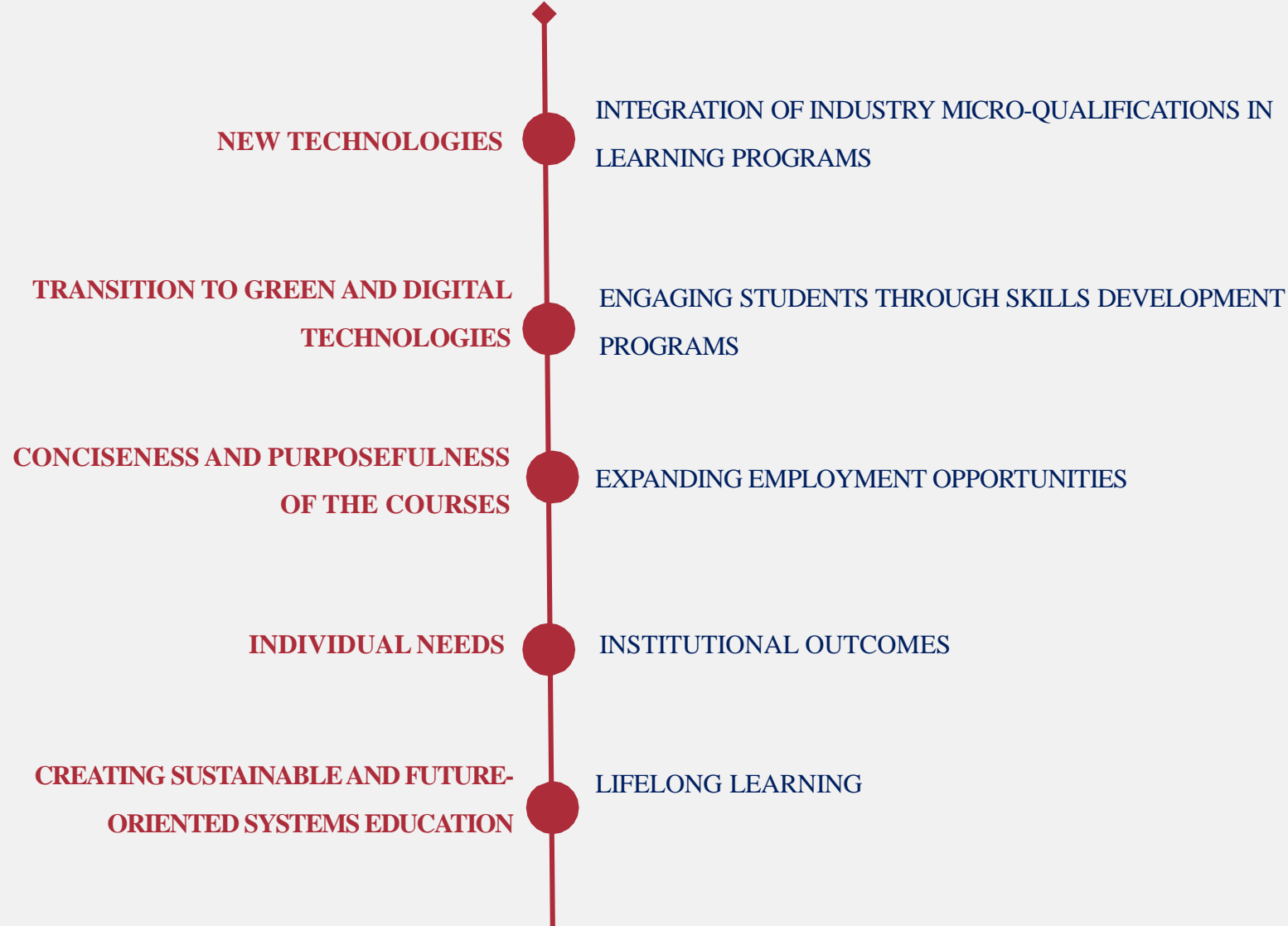
## NEW WAYS OF TRANSFORMING HIGHER EDUCATION

**MICRO-CREDENTIALS AND MICRO-  
QUALIFICATIONS, AS A TREND OF MODERN  
EDUCATION, BASED ON THE EXPERIENCE OF  
ALMATY TECHNOLOGICAL UNIVERSITY**

**FIRST VICE RECTOR OF JSC "ATU"  
BAURZHAN NURAKHMETOV**

**ASTANA, 2023**

# WORLDWIDE EXPERIENCE IN IMPLEMENTING MICRO-QUALIFICATIONS



|||

SINCE 2020, GOOGLE MICRO CERTIFICATES FOR IT SUPPORT ON THE COURSERA PLATFORM REPLACE A THREE-YEAR DEGREE

## MICRO-CREDIT

Purposeful achievements in learning: **knows, understands and can do**

Clearly defined standards and quality assurance

Independent value

Addition of micro- or macro-credits

Recognition of previous training

Multiple forms, a new and flexible way to recognize knowledge, skills and competencies

## MICRO QUALIFICATIONS

Short, specialized educational programs aimed at developing specific skills and competencies

## MICRO DEGREE

A direction that plays an important role in supporting professional development and retraining, and is used to address specific work needs

THE TREND OF MICRO QUALIFICATIONS  
WILL DOMINATE THE WORLD

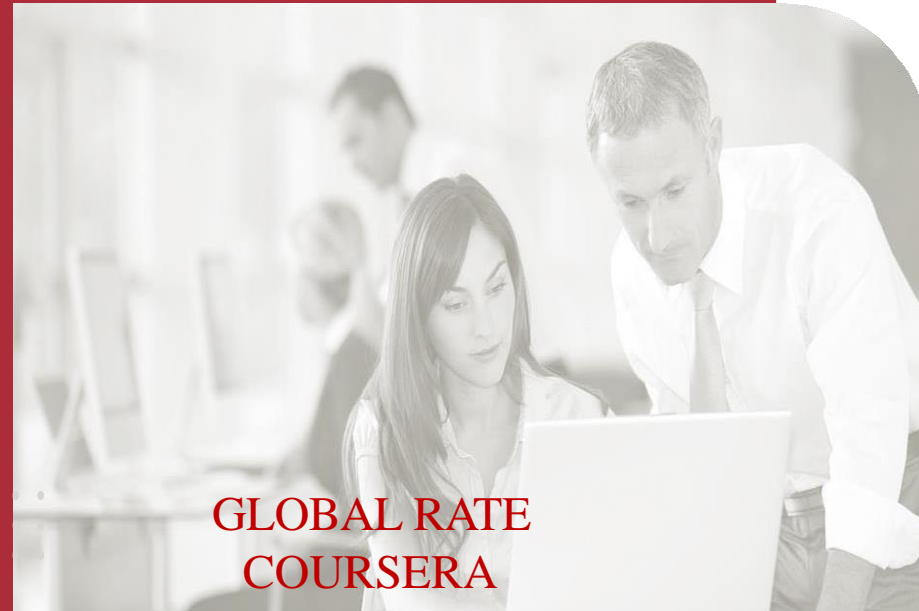
# WORLD EXPERIENCE IN IMPLEMENTATION OF MICRO QUALIFICATIONS

The impact of a professional certificate on employment (students)/ the impact of a professional certificate on employment (employers)

Germany	81	71
USA	86	74
Australia	87	71
UK	87	71
France	88	71
Mexico	88	78
Turkey	90	89
India	96	85
UAE	97	57
Saudi Arabia	97	61
Egypt	98	60

**GLOBAL**  
**Students - 90 %**  
**Employers - 72%**

Source – Coursera Research



**GLOBAL RATE  
 COURSERA**

**TOP-5**

SWITZERLAND  
 SPAIN  
 GERMANY  
 LUXEMBOURG  
 JAPAN

*Coursera*  
 124 mln students from  
 100 countries of the  
 world

*The purpose of the survey is the drivers, needs and problems of students who have received a degree, as well as employers who seek to hire them*

Coursera

Flexible  
 implementation

Certificates from Google, Meta, IBM, Salesforce, etc.

Teaching the necessary skills for the profession

# CURRENT SITUATION IN KAZAKHSTAN

**65.9%** EMPLOYMENT OF THE POPULATION

UNEMPLOYMENT RATE **4.7%**

**3.6%** YOUTH UNEMPLOYMENT RATE

YOUNG PEOPLE WHO DO NOT WORK AND ARE NOT ENGAGED IN EDUCATION OR VOCATIONAL TRAINING (NET) **7.5%**

**8.2** THOUSAND PEOPLE PROFESSIONAL TRAINING OR RETRAINING FOR ADVANCED TRAINING

Sources – Coursera Research Data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, II quarter of 2023

2023

**31 PLACE**  
GLOBAL RATING OF COURSERA

DIGITAL ECONOMY

**600 COURSES**  
IN 25 OHPE

TRANSLATED INTO KAZAKH

TRAINING COURSES

BUSINESS – 14 %  
DATA SCIENCE – 58 %  
TECHNOLOGY – 96%



GROWING DEMAND FOR HOSTED COURSES

**85 095 people**  
SCIENCE ENGINEERING MATH

**20 000**  
STUDENTS OF HE AND TPS



**6<sup>th</sup> PLACE**  
IN THE RATING  
OF THE ASIA  
PACIFIC REGION

**2022**  
5<sup>th</sup> place IN THE GROUP OF  
ADVANCED COUNTRIES, IN  
THE CATEGORY OF  
TECHNOLOGY

# RESEARCH RESULTS ON DEVELOPMENT TRENDS MICROQUALIFICATIONS

## RESPONDENTS' OPINIONS

They critically evaluate the return on investment for traditional 3- and 4-year degree programs, first of all, whether they will find a job after graduation

Payback of education

Adding a certificate to your LinkedIn profile

Having in-demand skills

ENROLLMENT IN  
INDUSTRY MICRO  
DEGREE  
PROGRAMS

A PROFESSIONAL  
CERTIFICATE WILL  
INCREASE THE INTEREST  
OF THE EMPLOYER

MICRODOCUMENTS  
WILL HELP YOU  
ACHIEVE SUCCESS  
IN YOUR WORK

## STUDENTS

6

**1909 RESPONDENTS**  
**17 EP**

BACHELOR – 98%  
MASTER – 1,2%  
PhD – 0,2%  
OTHER – 0,6%

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Ecology  
Biotechnology  
Technology of food services  
Technology of processing industries  
Standardization, certification and metrology  
Chemical technology of organic substances  
Technology of production of animal products

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Information Technology  
Automatization and maintenance  
Computer technology and software

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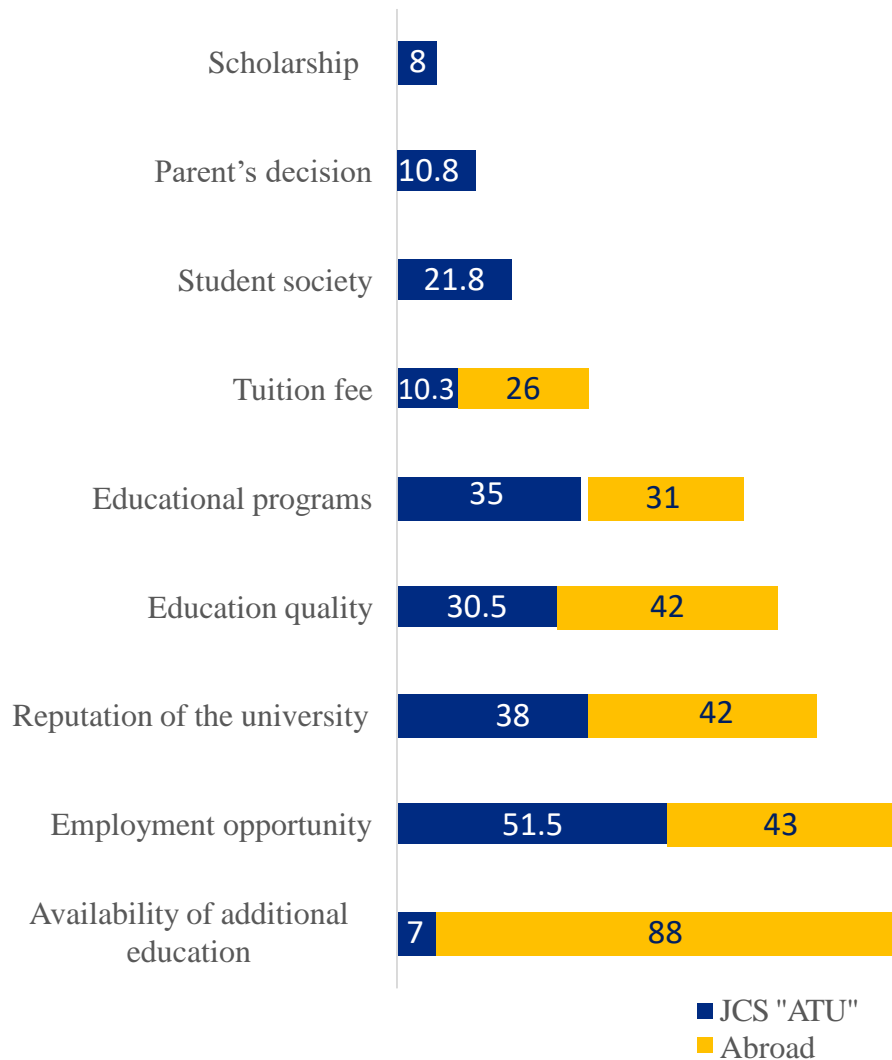
Design  
Technology and design of light industry products

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Tourism  
Finance Management  
Accounting and auditing  
Restaurant and hotel business

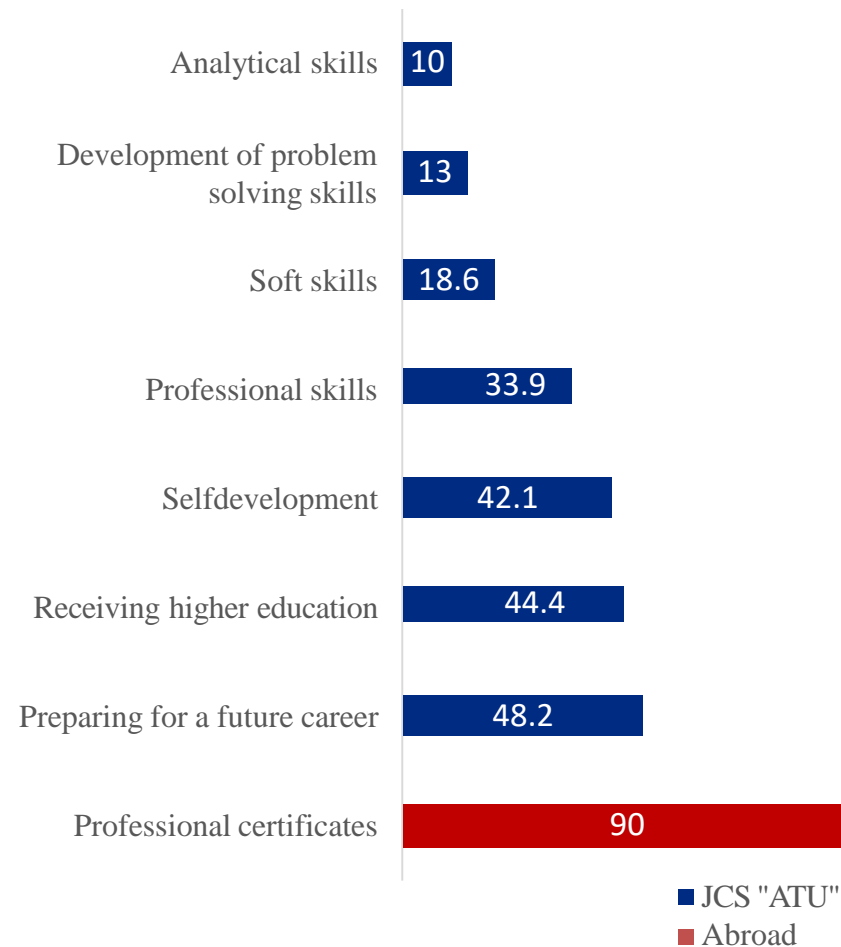
# RESULTS OF RESEARCH ON TRENDS IN THE DEVELOPMENT OF MICRO QUALIFICATIONS

## What influenced the choice of university?



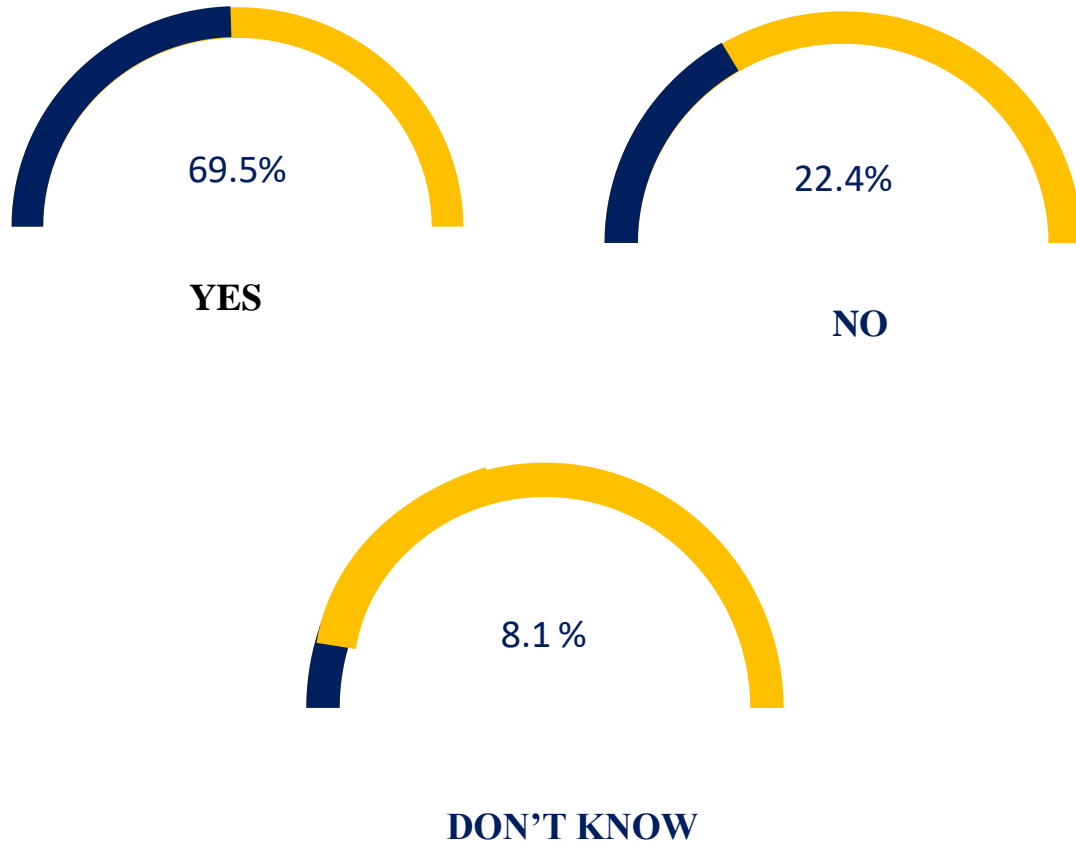
# STUDENTS

## Choose the most important educational goals for you:

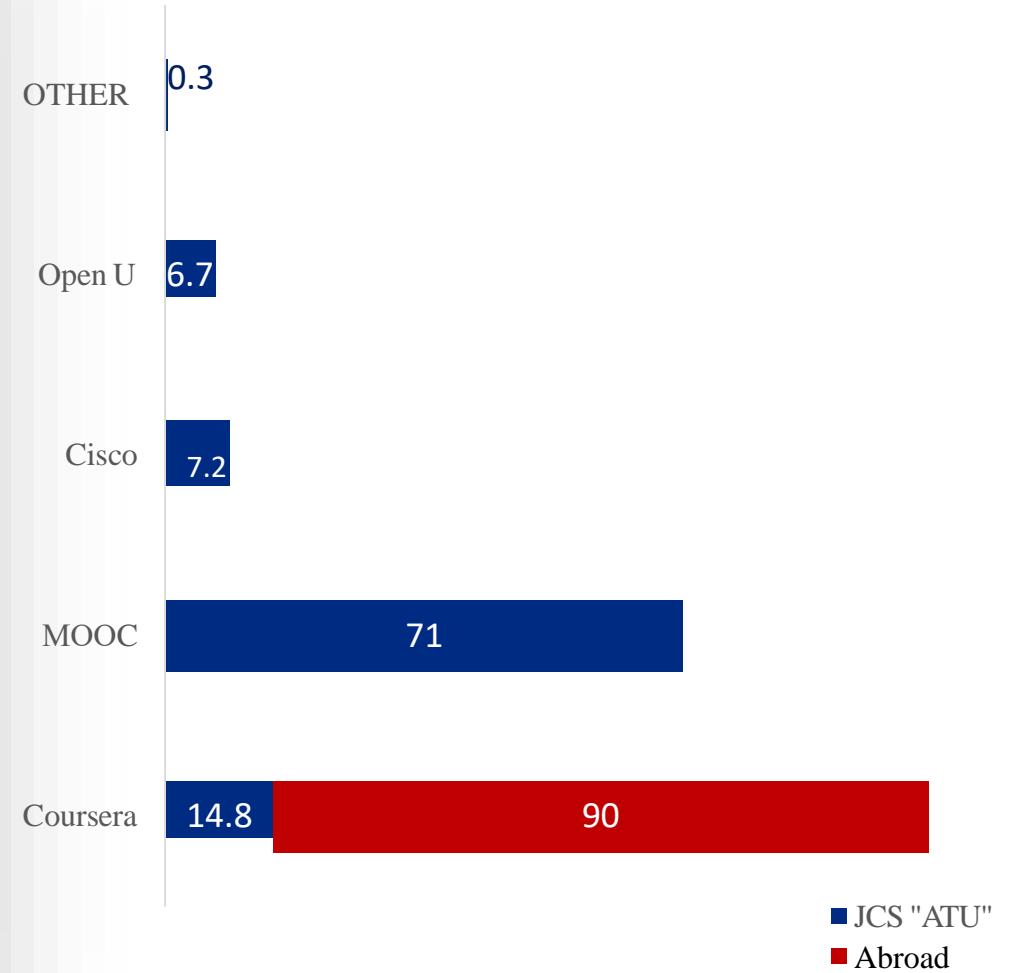


STUDENTS

Does the university have micro-qualification programs (mastering individual professional skills)?



What forms of additional (non-formal) education are available at the university?

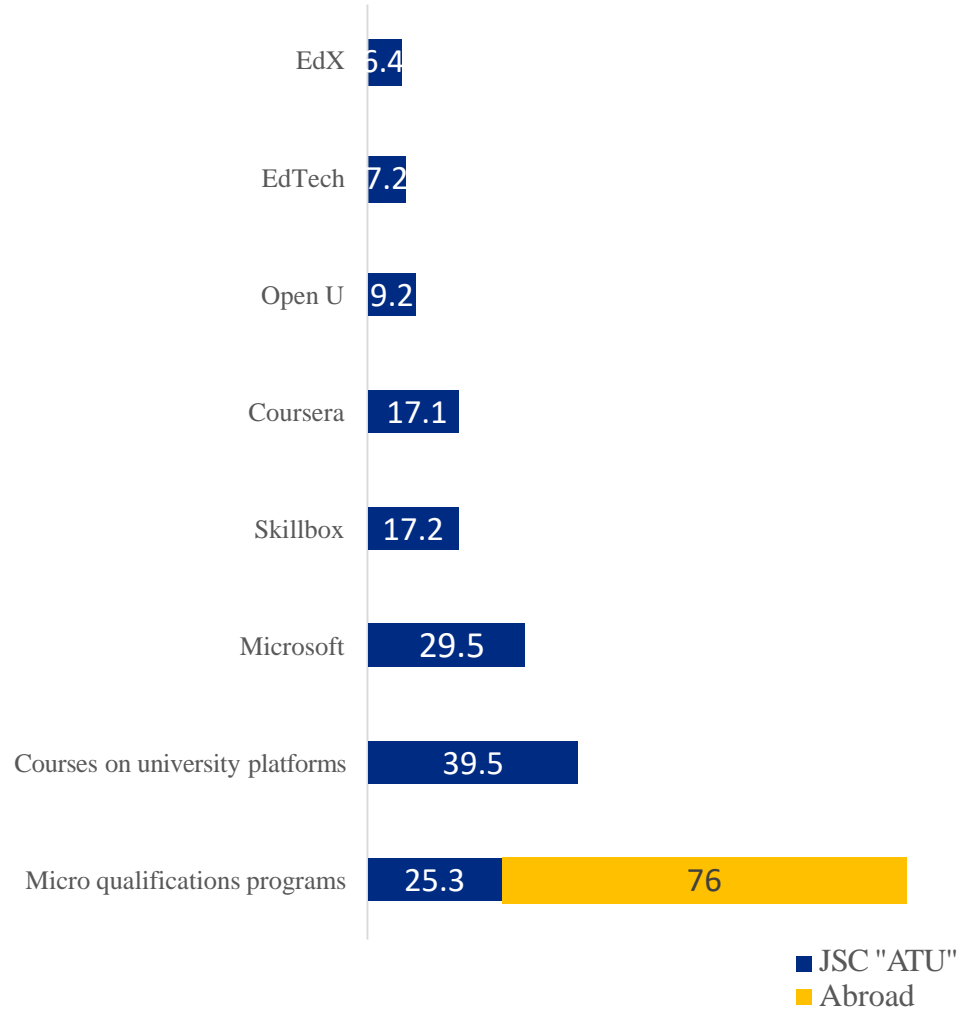


Sources – Questionnaire of JSC "ATU"  
Skillbox Research

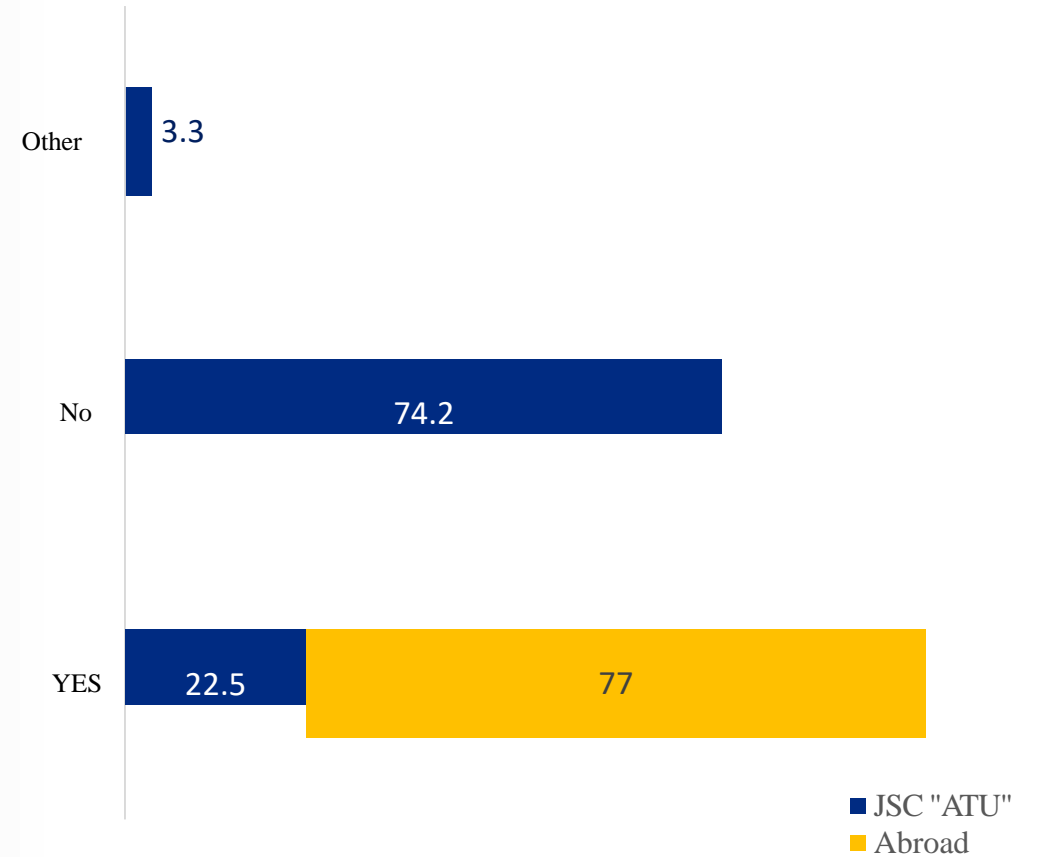


STUDENTS

Where would you like to take additional training and get additional skills?



Would you like to change your profession?



RESPONDENTS' OPINION

AVAILABILITY OF  
MICRODOCUMENTS  
(professional certificate)

CANDIDATES  
ALREADY HAVING  
THE NECESSARY  
SKILLS AND  
PRACTICAL  
EXPERIENCE

AVAILABILITY  
OF HIGHER  
EDUCATION

SOFT  
AND  
TECHNICAL  
SKILLS



EMPLOYERS

**37 respondents**

FIELD OF ACTIVITY

CONSUMER GOODS INDUSTRY  
FINANCIAL SECTOR

LIGHT INDUSTRY ENTERPRISES

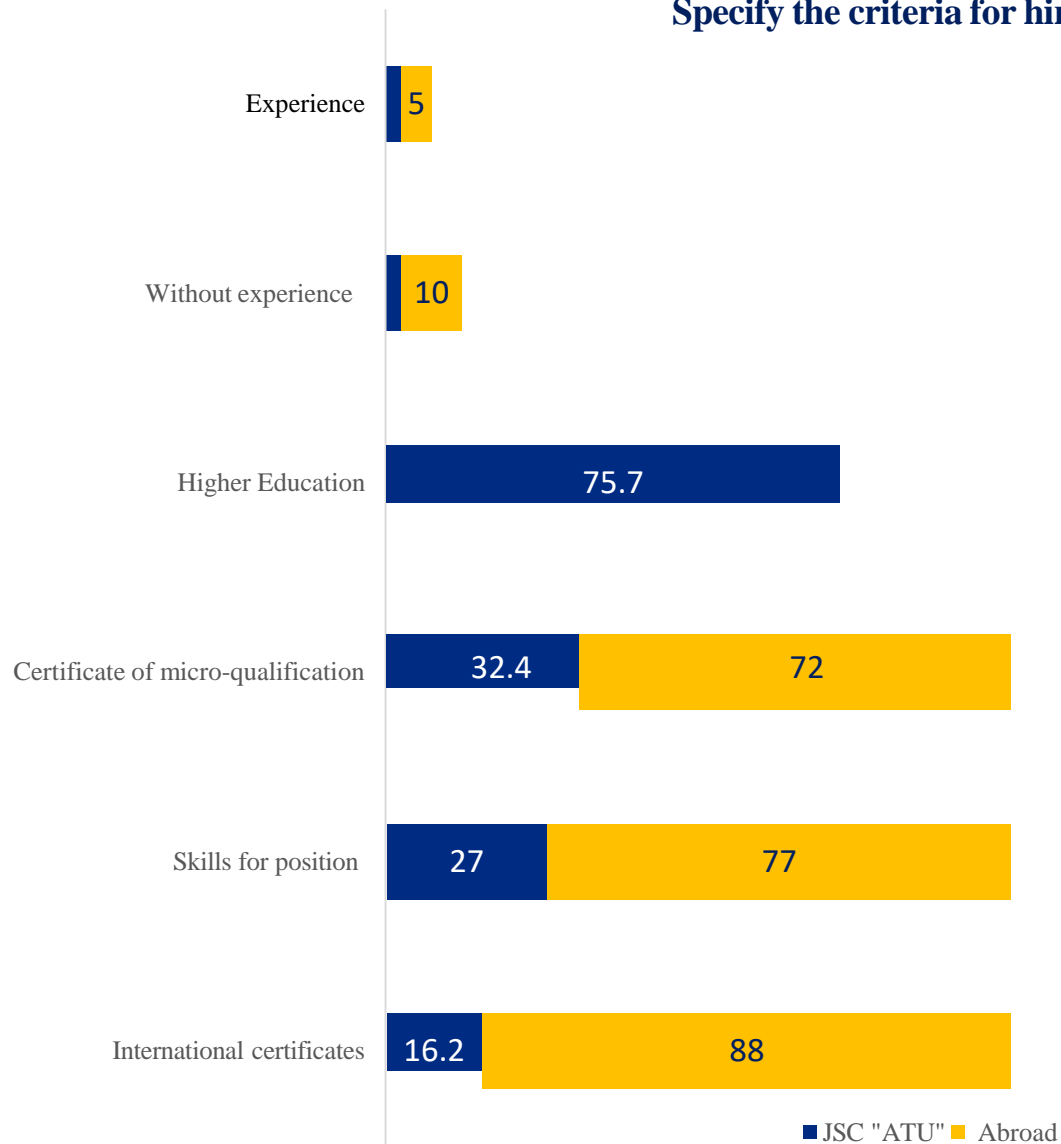
FOOD INDUSTRY ENTERPRISES

THE SPHERE OF SERVICES AND PUBLIC CATERING

*Bachelor – 51.4%*  
*Postgraduate – 10.8%*  
*Technical area – 37.8%*

EMPLOYERS

Specify the criteria for hiring

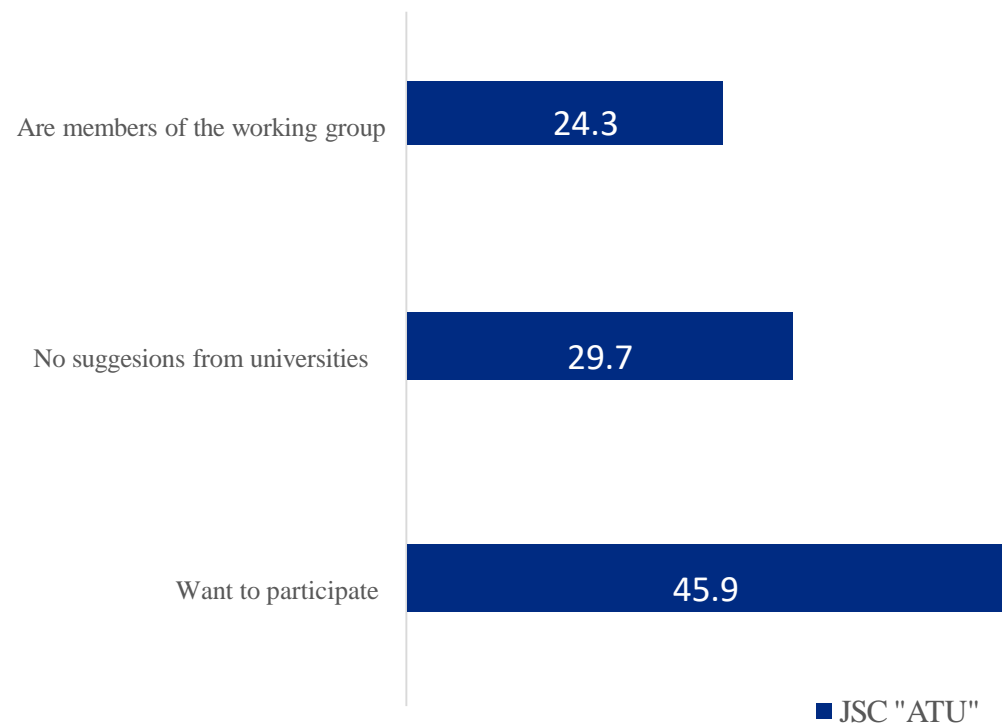


Is practical experience required for a candidate for the position?



Sources – Survey of JSC "ATU"  
Coursera Research

**Are you ready to take part in the development of  
micro qualifications programs?**



# RESULTS OF RESEARCH ON TRENDS IN THE DEVELOPMENT OF MICRO QUALIFICATIONS

UNIVERSITIES

**ENTRY-LEVEL PROFESSIONAL CERTIFICATES (industry micro qualifications)**

RESPONDENTS' OPINION

**93 %  
UNIVERSITIES BELIEVE THAT IT IS POSSIBLE TO OPEN NEW AND DIVERSE SOURCES OF INCOME**

**RECRUITMENT OF STUDENTS AND EMPLOYMENT OF GRADUATES**

**PROFESSIONAL SKILLS TRAINING IN DEGREE PROGRAMS**

*MICROPORTFELS OF 10 FOREIGN UNIVERSITIES*

*Coursera Electives the first 3 years*

*Special Programs (Micro Masters)*

*Professional certification courses (free of charge)*

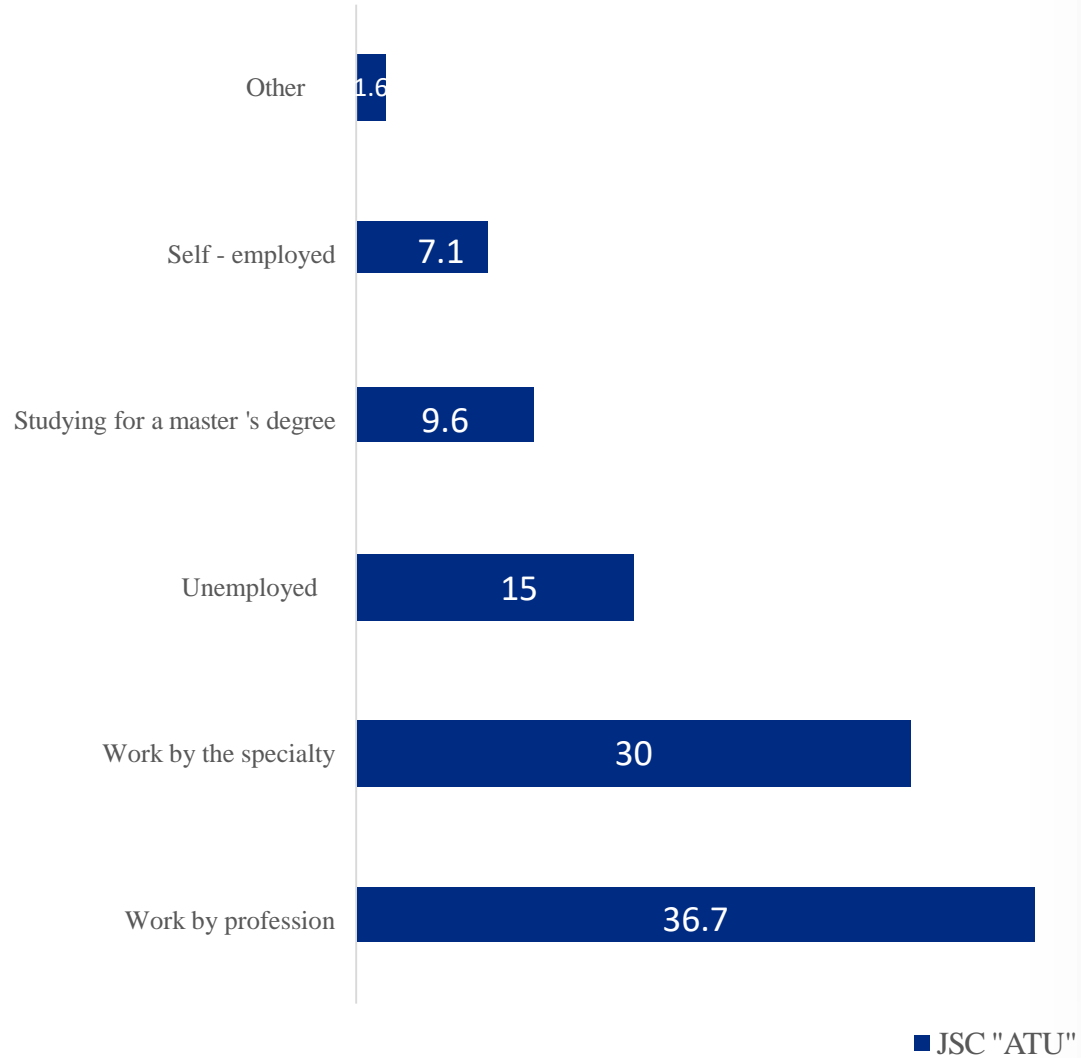
**GRADUATES**

**124 RESPONDENTS**

Bachelor – 79%  
Postgraduate – 17.7%  
PhD – 1.6%

# RESULTS OF RESEARCH ON DEVELOPMENT TRENDS MICRO QUALIFICATIONS

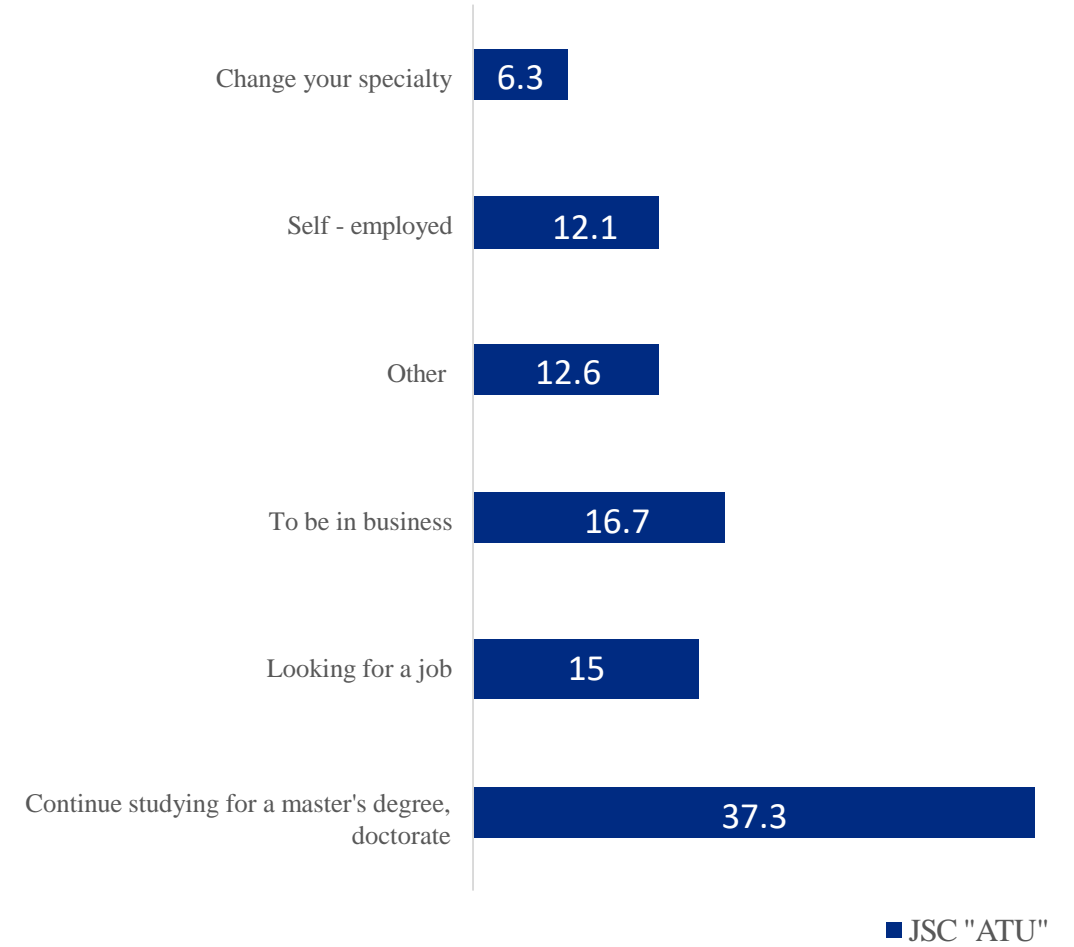
## Current situation



## GRADUATES

14

## In the near future you are planning to



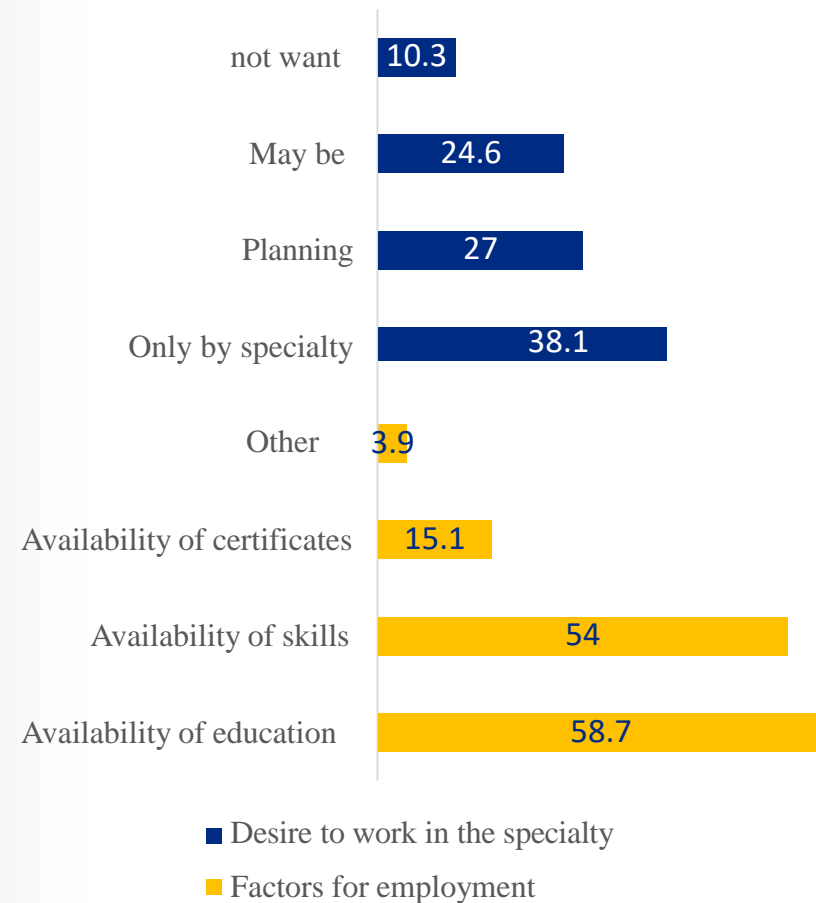
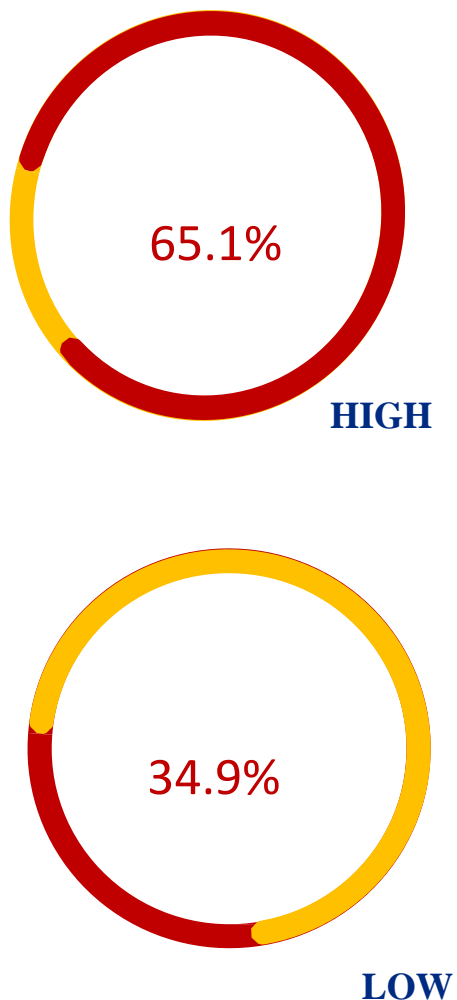
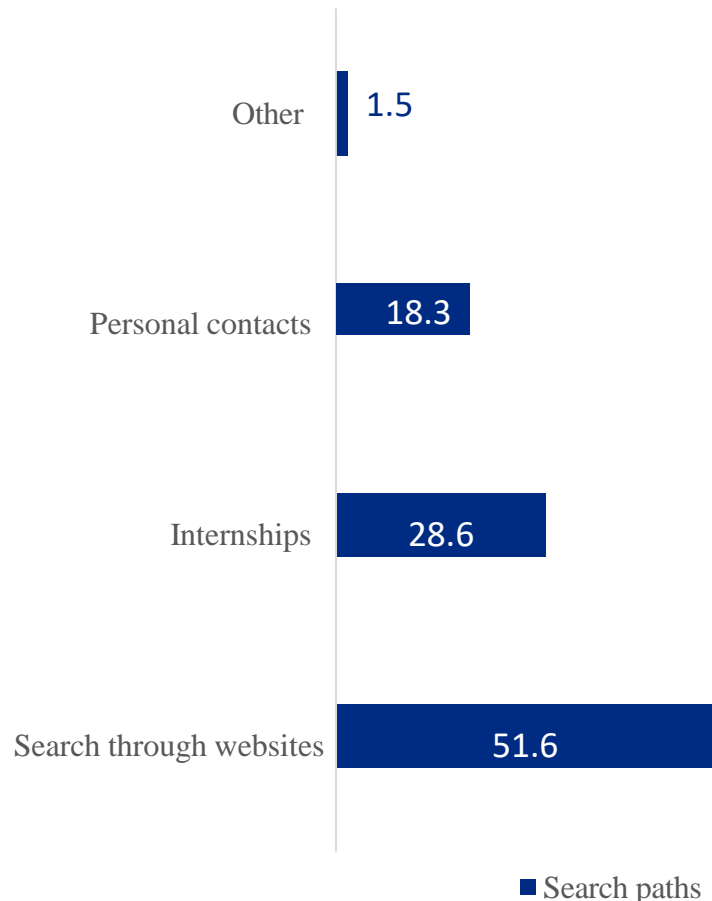
# RESULTS OF RESEARCH ON TRENDS IN THE DEVELOPMENT OF MICRO QUALIFICATIONS

## GRADUATES

The preferred way to find a job

Evaluate the opportunity to find a job in your specialty

Your desire to work in your specialty?  
Note the factors that may affect employment



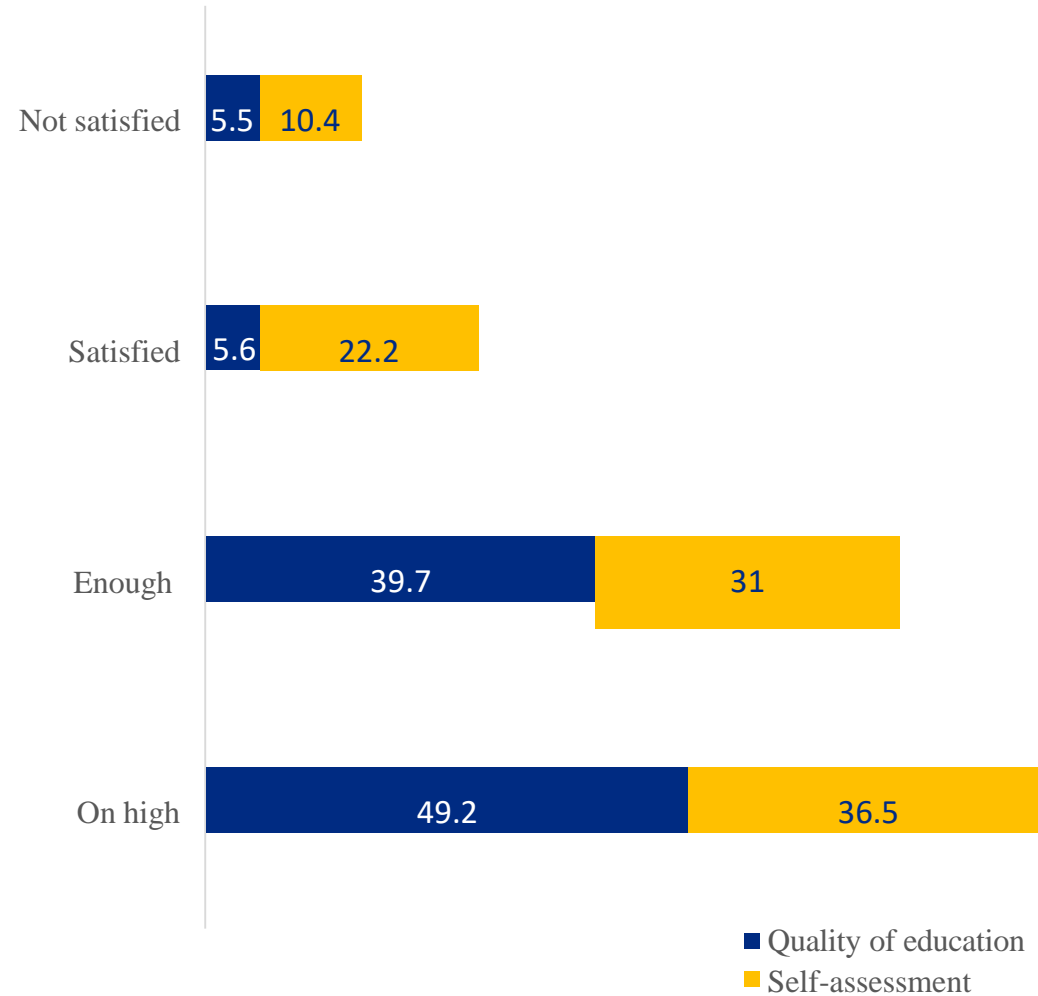
Sources – Survey of JSC "ATU"

Coursera Research

# RESULTS OF RESEARCH ON TRENDS IN THE DEVELOPMENT OF MICRO QUALIFICATIONS

## GRADUATES

Evaluate the education you have received  
Evaluate your self-confidence as a specialist

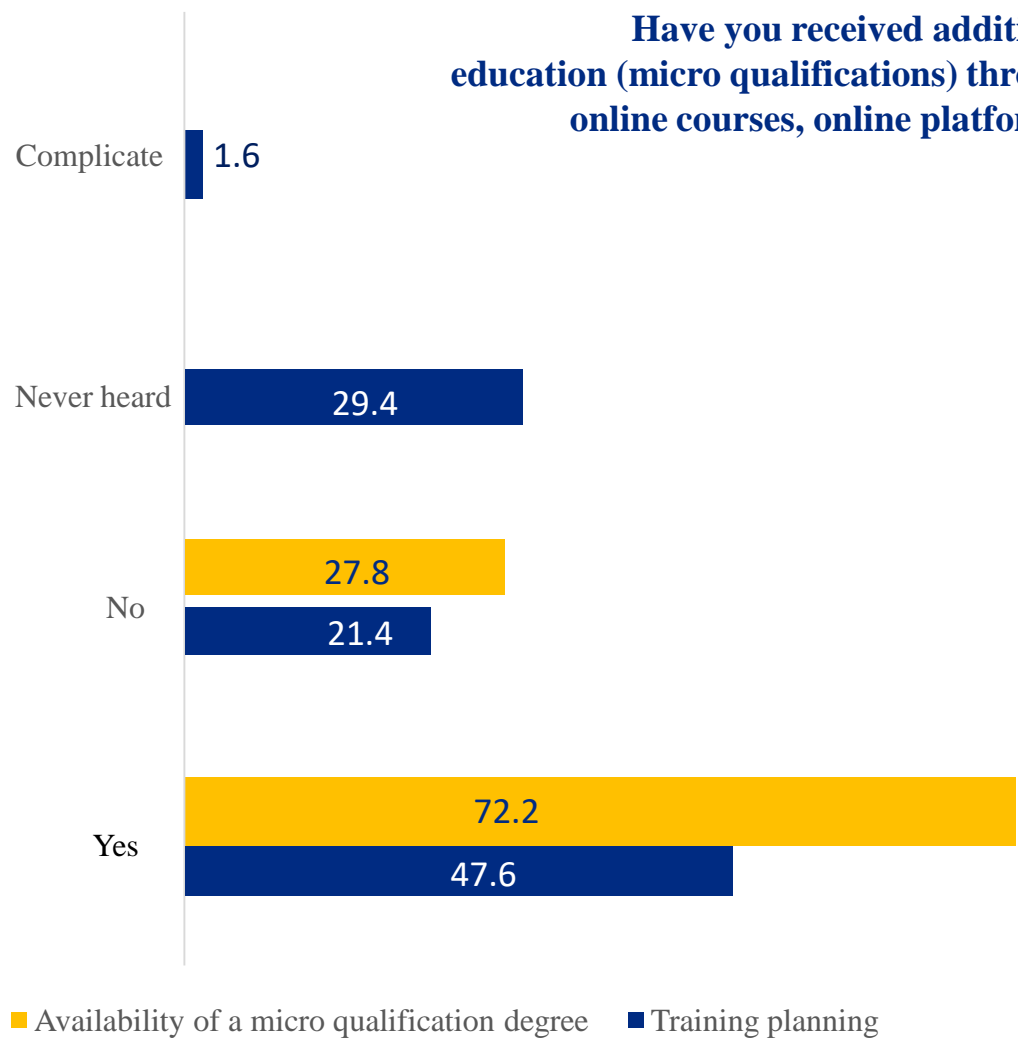


Sources – Survey of JSC "ATU"



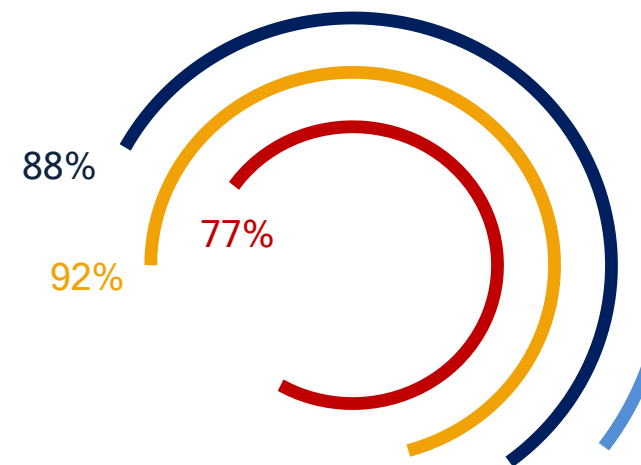
Are you planning to get additional education, get a micro qualification?

Have you received additional education (micro qualifications) through online courses, online platforms?



Source – Survey of JSC "ATU"

## SURVEY RESULTS EXPERIENCE OF OTHER COUNTRIES



88% of students choose universities that offer industry-specific microqualification programs or entry-level professional certificates

92% of employers choose applicants with professional industry certificates

77% of respondents want to change their profile, profession, find another job and improve their competencies

Sources – Center for Analytical Research and Modeling of Education, Russian Federation  
Yandex Practicum  
Skillbox

**UN SUSTAINABLE DEVELOPMENT GOAL (SDG 4)**

**QUALITY EDUCATION AND LIFELONG LEARNING AFFORDABLE AND TARGETED LEARNING  
AND SKILLS DEVELOPMENT FOR VULNERABLE COMMUNITIES**

**01**

**02**

**03**

**04**

**FLEXIBLE LEARNING**

**LIFELONG LEARNING**

**QUALITY**

**RETRAINING AND  
RE-QUALIFICATION**

FOCUS ON SKILLS AND  
COMPETENCIES, A  
COMBINATION OF  
SKILLS



NEW COMPETENCIES IN  
RESPONSE TO CHANGES  
IN THE LABOR MARKET  
AND RAPID ADAPTATION



RESPONSIBILITY FOR  
DEVELOPING STANDARDS  
OF SKILLS/COMPETENCIES



ASSESSMENT BASED ON  
STANDARDS,  
RECOGNITION OF  
ACHIEVEMENTS OF  
LEARNING OUTCOMES



## REGULATORY LEGAL ACTS REGULATING EDUCATIONAL ACTIVITIES

### MICRO QUALIFICATION



#### **THE CONCEPT OF DEVELOPMENT OF HIGHER EDUCATION AND SCIENCE IN THE REPUBLIC OF KAZAKHSTAN FOR 2023-2029**

*Resolution of the Government of the Republic of Kazakhstan dated March 28, 2023 No. 248*



#### **ABOUT PROFESSIONAL QUALIFICATIONS**

*Law of the Republic of Kazakhstan dated July 4, 2023 No. 14-VIII SAM*



#### **RULES FOR THE RECOGNITION OF LEARNING OUTCOMES OBTAINED BY ADULTS THROUGH NON-FORMAL EDUCATION PROVIDED BY ORGANIZATIONS INCLUDED IN THE LIST OF RECOGNIZED ORGANIZATIONS PROVIDING NON-FORMAL EDUCATION**

*Order of the Minister of Education and Science of the Republic of Kazakhstan dated September 28, 2018 No. 508*



#### **RULES FOR THE RECOGNITION OF ORGANIZATIONS PROVIDING NON-FORMAL EDUCATION AND THE FORMATION OF A LIST OF RECOGNIZED ORGANIZATIONS PROVIDING NON-FORMAL EDUCATION**

*Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 04, 2018 No. 537*



#### **RULES FOR THE ORGANIZATION OF THE EDUCATIONAL PROCESS ON CREDIT TECHNOLOGY OF TRAINING IN ORGANIZATIONS HIGHER AND (OR) POSTGRADUATE EDUCATION**

*Order of the Minister of Education and Science of the Republic of Kazakhstan No. 152 dated April 20, 2011*



#### **REQUIREMENTS FOR EDUCATIONAL ORGANIZATIONS TO PROVIDE DISTANCE LEARNING AND RULES FOR ORGANIZING THE EDUCATIONAL PROCESS FOR DISTANCE LEARNING AND IN THE FORM OF ONLINE TRAINING IN EDUCATIONAL PROGRAMS OF HIGHER AND (OR) POSTGRADUATE EDUCATION**

*Order of the Minister of Education and Science of the Republic of Kazakhstan dated March 20, 2015 No. 137*

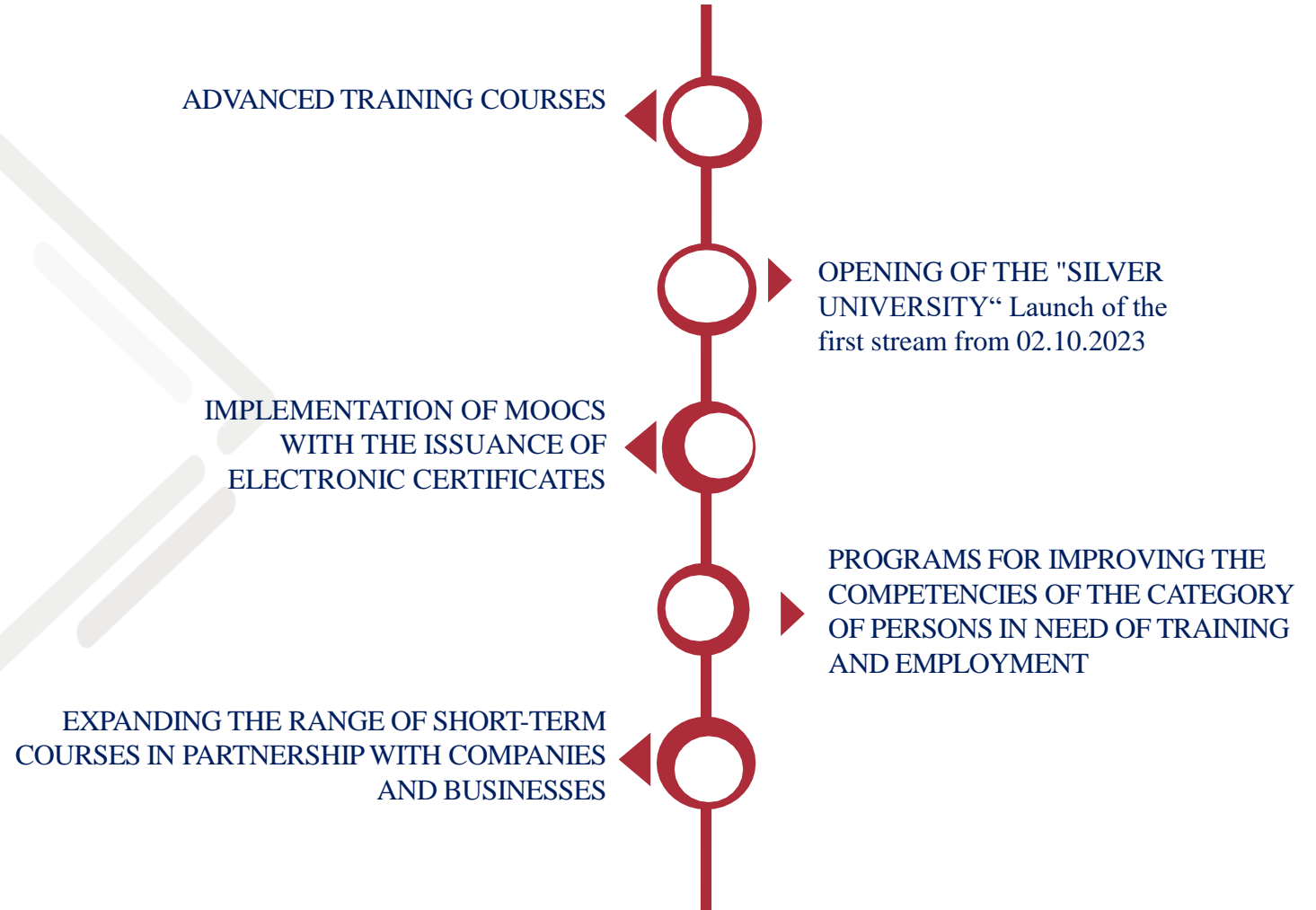
# THE EXPERIENCE OF "ATU" JSC IN THE IMPLEMENTATION OF MICRO-QUALIFICATION PROGRAMS

STUDENT ORIENTATION INSTITUTIONAL  
ADVANTAGES

INDUSTRY MICRODOCUMENTS  
(PROFESSIONAL CERTIFICATES FROM  
COURSERA)

REBUILDING LEARNING APPROACHES

## LIFELONG LEARNING DEVELOPMENT



*Source – JSC "ATU"*

# THE EXPERIENCE OF JSC "ATU" IN THE IMPLEMENTATION OF MICROQUALIFICATION PROGRAMS

OBTAINING A PROFESSIONAL CERTIFICATE

SUCCESSFUL CAREER

NEW OPPORTUNITIES FOR MASTERING TARGET SKILLS

INDUSTRY MICRO-QUALIFICATION PROGRAMS

UPDATING TRAINING PROGRAMS IN ACCORDANCE WITH THE GOALS AND CHANGING MARKET NEEDS

INDIVIDUAL APPROACHES TO LEARNING

ENABLING STUDENTS TO STUDY AT THEIR OWN PACE THROUGH ONLINE COURSES (100%)

GEOGRAPHY OF TRAINING

OBTAINING CERTIFICATES FROM VARIOUS UNIVERSITIES AND VARIOUS COMPANIES

INDUSTRY MICRODOCUMENTS

PROFESSIONAL CERTIFICATES OF LEADING PARTNERS



EDUCATIONAL AND LABORATORY  
IT CLASS OF  
ACADEMY HUAWEI  
TRAINING AND RETRAINING OF  
PERSONNEL  
AT THE INTERNATIONAL LEVEL

DIRECTION NETWORK INDUSTRIES  
SWITCHING AND ROUTING CCNA  
COURSE  
V7 CISCO NETWORKING ACADEMY  
CISCO SYSTEMS  
PARTNER PROGRAM  
22 STUDENTS

Centre of  
VR/AR TECHNOLOGIES

7 COURSES  
CISCO

APPLE TRAINING CENTER  
LAB

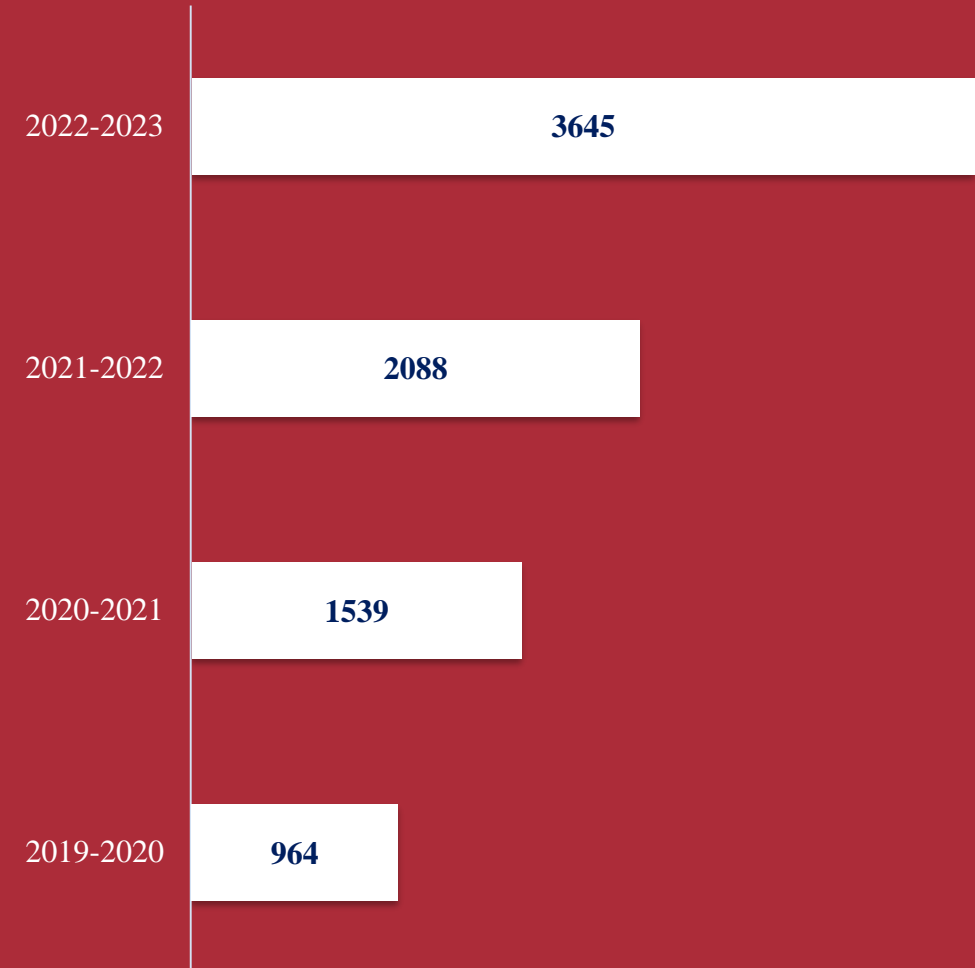
IE  
ITEACHER ACADEMY

# THE RESULTS OF THE DEVELOPMENT OF ONLINE COURSES MOOC AND COR

## ONLINE COURSES (MOOC)



## DIGITAL EDUCATIONAL RESOURCES





## INTERACTIVE VIDEO STUDIO WITH HARDWARE AND SOFTWARE COMPLEX

INTERACTIVITY

TOUCH LED SCREEN

VISUAL LEARNING

RECORDING AND  
SAVING SIMPLICITY

TELEPROMPTER



**STUDIO FOR BROADCASTING  
ONLINE CLASSES**

*FROM APRIL 2023*



# FORESIGHT SESSION

**MICROQUALIFICATIONS – EXPANDING  
OPPORTUNITIES FOR LIFELONG  
LEARNING AND EMPLOYMENT**



## **PARTICIPANTS**

Committee of Higher and Postgraduate Education of the Ministry of Education and Science of the Republic of Kazakhstan

Higher Education Development Center of the Ministry of Science and Higher Education of the Republic of Kazakhstan

«ATAMEKEN»

Organizations of Higher and Postgraduate Education of the Republic of Kazakhstan

Universities of foreign countries

Industry associations profile enterprises

## **WITHIN THE FRAMEWORK OF FORESIGHT**

- A FORESIGHT STUDY OF THE LABOR MARKET WAS CONDUCTED FORECASTING THE NEEDS FOR NEW COMPETENCIES
- MICRO QUALIFICATIONS FOR GRADUATES OF SUPERVISED UMO UMS GROUPS OF EDUCATIONAL PROGRAMS
- THE POSSIBILITIES OF THEIR EMPLOYMENT ARE CONSIDERED

# DEVELOPMENT OF MICRO QUALIFICATIONS

90% OF MICRO-QUALIFICATION PROGRAMS ARE DEVELOPED IN COOPERATION WITH BUSINESS REPRESENTATIVES, WHICH ENSURES THEIR RELEVANCE

DEFINITION OF  
EVALUATION CRITERIA



DEVELOPMENT OF  
EDUCATIONAL  
MATERIALS AND  
TEACHING METHODS



ANALYSIS OF LABOR  
MARKET NEEDS



# FOOD AND PROCESSING INDUSTRIES OF THE AGRO-INDUSTRIAL COMPLEX

## MICRO QUALIFICATIONS PROGRAMS FROM TRAINING TO EMPLOYMENT

SPECIALIST IN THE DEVELOPMENT OF TECHNOLOGICAL  
DOCUMENTATION FOR FOOD PRODUCTS

SPECIALIST IN THE IMPLEMENTATION OF HACCP IN A  
FOOD ENTERPRISE

SPECIALIST IN THE QUALITY AND SAFETY OF FOOD  
PRODUCTS

IT TECHNOLOGIST OF FOOD PRODUCTION

TECHNOLOGIST-MANAGER OF FOOD PRODUCTION

SPECIALIST IN 3-D FOOD MODELING

1C-ACCOUNTANT OF FOOD PRODUCTION

EXPORT MANAGER OF FOOD PRODUCTS

SPECIALIST IN ECO-PACKAGING IN THE FOOD  
INDUSTRY

NUTRITION SPECIALIST

## EMBEDDED IN EDUCATIONAL PROGRAMS

MINOR  
CONFIRMATION OF CONFORMITY OF  
PRODUCTS

20  
ECTS

## COURSES

TECHNOLOGY FOR THE DEVELOPMENT OF  
REGULATORY DOCUMENTATION

PRODUCT CERTIFICATION

QUALITY ASSESSMENT IN THE FIELD OF ACCREDITATION

CUSTOMS CONTROL

## EXAMPLE OF A MICRO QUALIFICATIONS PROGRAM STANDARDIZATION, CERTIFICATION AND METROLOGY

28

ACCORDING TO THE DEVELOPED MICRO QUALIFICATION PROGRAMS

MICRO QUALIFICATION 1

**SPECIALIST IN THE  
IMPLEMENTATION OF HACCP IN  
A FOOD ENTERPRISE**

6  
ECTS

MICRO QUALIFICATION 2

**PRODUCT QUALITY  
CONTROL SPECIALIST**

9  
ECTS

## COURSES

IMPLEMENTATION OF THE NASSR SYSTEM

INTERNAL AUDIT OF THE NASSR SYSTEM

PRODUCT QUALITY CONTROL AT DIFFERENT  
STAGES OF THE PRODUCTION PROCESS

ORGANIZATION OF WORK ON  
PRODUCT QUALITY CONTROL

ORGANIZATION OF WORK TO IMPROVE  
THE QUALITY OF PRODUCTS

**CONSUMER GOODS INDUSTRY**

**RESTAURANT AND HOTEL  
BUSINESS**

**MICRO QUALIFICATIONS PROGRAMS  
FROM TRAINING TO EMPLOYMENT**

IT-TECHNOLOGY

RAW MATERIALS PURCHASING MANAGER

EXPERT IN TEXTILE RAW MATERIALS AND LIGHT INDUSTRY  
MATERIALS

VIRTUAL TRAINER  
HOTEL AND  
RESTAURANT BUSINESS

DATA – ANALYTICS

TRENDWATCHER

CREATOR

MOTIVATOR

# INDUSTRY MICRODOCUMENTS -

# IDENTIFY AND CONFIRM THE SKILLS OF CANDIDATES

DO MICRO-LOANS SUPPLEMENT OR REPLACE QUALIFICATIONS?

GROWTH IN THE SUPPLY OF MICROCREDITS

THE GROWING NUMBER OF MICRO CERTIFICATES MAY LEAD TO THE LOSS OF THEIR VALUE

MICROCREDIT OPENS UP THE POSSIBILITY OF SUPPLEMENTING DEGREES AND SIMILAR QUALIFICATIONS WITH NEW AND SHORTER FORMS OF PROVISION THAT MEET THE NEEDS OF EMPLOYERS



PRESENTATION OF FLEXIBLE AND MODULAR LEARNING OPPORTUNITIES

CONTINUOUS PROFESSIONAL DEVELOPMENT AND ADULT EDUCATION

THE NEED FOR NEW FORMS THAT CAN BETTER DOCUMENT THE INFORMAL, ONLINE AND CONTINUOUS DEVELOPMENT OF SKILLS AND KNOWLEDGE BOTH INSIDE AND OUTSIDE FORMAL EDUCATION

EXPANDING LEARNING OPPORTUNITIES

## STRENGTHS



Rapid acquisition of skills, by passing long and complete educational programs

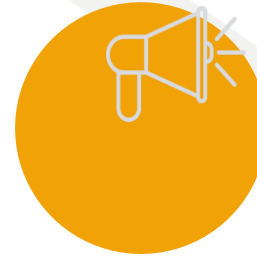
Lifelong Learning Policies

They are cheaper than full-fledged EP

Accessibility for the majority of the diversity of the set of courses

Competence Center

## OPPORTUNITIES



Online technologies using MOOCs

Individualization of education

Introduction of level training

Diversification of the recruitment system

Attracting leading specialists of enterprises for training

Cooperation with leading organizations with innovative production sites

## WEAKNESSES



Not always a deep understanding of the subject area

Unregulated education sector (external courses)

There are few studies on the effectiveness of micro-credentials

Micro-credentials are the results of a more traditional learning experience (minor, short-term courses)

The results of non-formal education are not always recognized when applying for a job

Micro-certifications are often promoted as an effective way to improve the skills of employees throughout their lives

## THREATS



There is no widespread recognition in the academic or professional community

The lack of consensus on the proposed courses in the hope of helping this field move towards the common goal of "lifelong learning"

Risks becoming an alternative to traditional education

# TARGET INDICATORS AND EXPECTED RESULTS

LIFELONG LEARNING DEVELOPMENT

CONCEPTS OF DEVELOPMENT OF  
HIGHER EDUCATION AND SCIENCE OF  
THE REPUBLIC OF KAZAKHSTAN FOR  
2023-2029

STRATEGIC PLAN OF “ATU” JSC

## TARGET INDICATORS

NUMBER OF PROGRAMS  
FOR THE DEVELOPMENT OF THE  
SILVER UNIVERSITY  
PROJECT 2029 – 30 programs

NUMBER OF SHORT-TERM  
COURSES IN PARTNERSHIP WITH  
COMPANIES AND BUSINESSES

2029 – 10 programs

NUMBER OF  
MICRO-QUALIFICATION  
PROGRAMS,  
AIMED AT IMPROVING THE  
COMPETENCE OF THE  
CATEGORY OF PERSONS  
IN NEED OF TRAINING AND  
EMPLOYMENT  
2029 – 15 programs

THE SHARE OF MOOCS WITH  
THE ISSUANCE OF ELECTRONIC  
CERTIFICATES

2029 – 100%



A group of four diverse professionals (two men and two women) are seated around a conference table in a modern office setting. They are engaged in a meeting, with some looking at laptops and others at each other. A semi-transparent white rectangular box is overlaid on the center of the image, containing the text 'THANK YOU FOR YOUR ATTENTION' in a bold, blue, serif font.

**THANK YOU FOR YOUR  
ATTENTION**

Email: [info@atu.edu.kz](mailto:info@atu.edu.kz)