National Impact Study
of Erasmus+ projects on
Capacity Building in Higher Education
in Kyrgyzstan

National Erasmus+ Office in Kyrgyzstan

National Impact Study of Erasmus+ projects on Capacity

Building in Higher Education in Kyrgyzstan

Bishkek 2021

CONTENTS

List of abbreviations

HEI	Higher education institution
HE	Higher education
JSU	Jalal-Abad State University
GIS	Geoinformation systems
SSHE/ГОССТ	State standards in higher education field
EU	European Union
ISU	K. Tynystanov Issyk-Kul State University
ICT	Information and communication technologies
KSU	I.Arabaev Kyrgyz State University
KSMA	I.Akhunbaev Kyrgyz State Medical Academy
KSTU	I.Razzakov Kygyz State Technical University
KSUCTA	N.Isanov Kyrgyz State University of Construction, Transport and Architecture
KNAU	K.I. Skryabin Kyrgyz National Agrarian University
KNU	J.Balasagyn Kyrgyz National University
KR	Kyrgyz Republic
KEU	M.Ryskulov Kyrgyz Economic University
ISM	International School of Medicine
MES KR	Ministry of Education and Science of the Kyrgyz Republic
IUKR	International University of Kyrgyz Republic
AIU	"Ala-Too" International University
NSU	S. Naamatov Naryn State University
LSGB	Local Self Government Body
OshSU	Osh State University
OshTU	M.Adyshev Osh Technological University
CBHE	Capacity Building in Higher Education
F	Faculty
Fig.	Figure
TSU	Talas State University
UEE	University of Economy and Entrepreneurship
ECTS	European Credit Transfer and Accumulation System
PhD	Doctor of Philosophy
UNESCO-CEPES	UNESCO - European Center for Higher Education

Introduction

The main aim of Erasmus+ (Capacity building in higher education) programme is to support the reformation and modernization of higher education in partner countries including Kyrgyzstan, which is part of Central Asian region. Cooperation between the EU and Kyrgyzstan represents an important objective of the European Union's external relations and international development cooperation policy and aims to increase political, economic and cultural links both between the European Union and Kyrgyzstan and between these countries themselves.

Erasmus+ was launched in partner countries including Kyrgyzstan in 2014 and is based on achievements and experience of previous EU funded programmes such as Tempus and Erasmus Mundus Cooperation Window. Given the Tempus programme's impact, the European Commission's new education programme, Erasmus+ (2014-2020) incorporates Tempus-like activities under its Key Action 2 – Capacity building in higher education' strand.

In this National Impact Study, the National Erasmus+ Office in Kyrgyzstan with the support from EACEA have taken a look at the impact of Erasmus+ capacity building projects in Kyrgyzstan, which have been implemented in the period of 2015-2018.

The aim of the national impact study is to highlight achievements and the role of the stakeholders who contributed to them and it is important to acknowledge their contributions and hard work in helping to make the programme a success.

Also, National Impact Study aims to identify potential long-term structural impact of CBHE projects on the systems, organizations and individuals; to identify innovative character, the impact and sustainability of projects' results and how they intend to maintain or develop the outcomes after the end of project.

The National Impact Study covers 16 CBHE projects. Eighty five (85) project proposals on capacity building in higher education have been submitted with involvement of higher education institutions from Kyrgyzstan and sixteen projects (16) out of 85 proposals have been selected for funding (the full list of projects is presented in the Annex 1).

Summary of conclusions of the National Impact Study

The impact of CBHE projects as a whole was analysed at individual, institutional and national levels.

Impact at individual level

Erasmus + capacity building projects made a considerable contribution into capacity building of professional skills of staff at higher education institutions in Kyrgyzstan.

Taking into account that opportunities of higher education institutions in Kyrgyzstan to provide professional development for staff are limited to date it was vividly identified that Erasmus+ capacity building projects gave professors the opportunities to meet peers in their relevant field and to get professional experience exchange at different levels and between different countries. By working together at different international consortia, professors have been exposed to different perspectives and gained new insights into their subject updating their skills and knowledge.

Exchange of experience and opinions on educational programs, transfer of knowledge and practice, use of innovative tools and technologies at work are the most significant results of the implementation of the developed courses within the framework of Erasmus+ projects. The contacts built have proven extremely useful for pursuing further research and enhancing their publications list. Indeed, contacts with European professors, made through Erasmus+, have sometimes led to further research activities after the end of the project, such as joint publications and peer- reviews. This has definitely helped enhance the sustainability and the long-term impact of the CBHE projects' outcomes.

An important result of the introduction of training courses within the framework of CBHE projects is an increase in the number of students and undergraduates in educational programs (37.9) and the number of employment of graduates according to their speciality (16.8%).

As a result of the completed refresher training/ educational courses, the teachers improved primarily their communication skills and technical / IT skills. They also acquired project management skills, research skills, intercultural and special competencies / profile knowledge. The highest level of contribution to the professional development of teachers was noted for the positions "Improving the material and technical base of the university", "Intercultural communication", "Implementation of innovations, ICT technologies", "Participation in international cooperation activities" and "Academic mobility".

The level of partner interaction of their university in achieving the results of the project was assessed by the respondents quite high, which is confirmed by the continuation of cooperation in network efforts, networking between universities and partners for the exchange of experience, practices and in the continuation of the development of curricula, courses, guest lectures, seminars in online format. The sustainability of the project results is also ensured by the intensification of scientific research, the introduction of new methodological developments and joint publications.

Thanks to the Erasmus + projects, a large number of internships, seminars on advanced training and the introduction of new teaching methods have been carried out, student and teacher exchange programs have produced good results in ensuring the sustainability of the project, many students upon arrival started their own business and actively participated in various projects, teachers have honed their pedagogical skill and are actively involved in the development of new and improvement of existing educational programs.

Impact at institutional level

Curriculum development projects are the main popular topics among CBHE projects implemented in Kyrgyzstan within the Erasmus+ CBHE component. Curriculum modernization projects allowed professors to work together in international teams, to revise old courses and develop new ones. Bachelor's and Master's programs are most actively involved in CBHE projects, and they are taught mainly at the "mandatory course" level in Russian. For the main part of the developed programs, online training systems have been introduced. On the whole, the interviewed teachers assessed positively the quality of the developed methodology for course development in which they participated.

The level of awareness of heads of universities (rectors and vice-rectors) about the progress and results of the projects was very high. Such that 81% of respondents noted that their leaders took an active part in the implementation of air defense projects.
Councils that control the quality of project implementation are available only in 6 universities out of 15 surveyed. The results of this survey have shown that where there is such a body or council, there is more often control over the implementation of projects. Almost all participating universities (86.7%) are completely satisfied with the results of their participation in air defense projects. Based on the results of CBHE projects, 13 out of 15 universities (86.7%) introduced changes to the strategic development documents of the university / faculty.

CBHE projects had an integrated impact on the strategic goals of the development of universities, first of all, it is the improvement of the material and technical base in all surveyed universities. The created video conference classes, a biomedical laboratory, creative laboratories, GIS laboratories, incubators, online platforms and electronic versions of modules and other infrastructure turned out to be very timely, and directly influenced the level of readiness of universities for distance learning before Covid-19. This especially helped regional universities, which have fewer resources for building up their material and technical base.

Basic office equipment was purchased at 14 out of 15 universities (93.3%). And only 11 universities (73.3%) purchased specialized laboratory equipment during their participation in projects. In order not to distract project funds, universities could acquire basic office equipment outside of participation in international projects. Only 4 universities (26.7%) have specialists with the knowledge and skills to work with specialized equipment and software applications.

Erasmus + projects have had a strong impact on expanding and establishing cooperation with other universities. At the time of this survey, 69.2% of respondents noted cooperation in supporting student mobility; 65.4% - teacher mobility; 57.7% - development of joint training programs; 30.8% - joint research. The universities have maintained cooperation with local and foreign universities. But the

level of cooperation with partners represented by companies and with industry / professional associations turned out to be lower (stable preservation was noted in 9 out of 15 universities).

Among the types of cooperation with foreign partners, experts most often noted the value of work at conferences and round tables. Regarding local partners, all experts unanimously noted that the Erasmus + projects contributed to the improvement of knowledge exchange among the universities of the Kyrgyz Republic.

CBHE projects have positively influenced the strengthening of the qualification potential of university departments for international relations. A clear improvement was noted by 57.7% of respondents. In 13 universities out of 15 surveyed, documents were adopted aimed at supporting internationalization, deepening into the international academic space, to international standards. 11 out of 15 universities noted that the experience gained during the implementation of projects is used in other schools and departments.

Additional funding for the use and further development of the project results was received by 5 universities from the entire set of surveyed universities. It is necessary to educate the administration of universities in what ways the results of projects can be kept in working order and how to develop them in the future. 4 universities noted that they also attract funds from other grants and projects to support the purchased equipment. 1 university, among others, attracts funds that received through the provision of paid services / commercialization of objects opened through the Erasmus + projects.

Impact at national level

Erasmus+ projects had an impact on national higher education policy in Kyrgyzstan. The Erasmus+ projects are fully consistent and relevant with the Education Development Strategy of the Kyrgyz Republic (2012-2020), contributed to the improvement of the quality of higher education; development and modernization of curriculum at bachelor, master and PhD levels; improving communication with employers; internationalization of higher education and inclusion; influenced the creation and development of a national qualifications framework in the Kyrgyz Republic based on the European qualifications framework for higher education; contributed to the promotion and use of digital tools in the HE system; integration of ICT into higher education curricula; introduction of a three-tier education system; development of the ECTS system in education. The impact can be observed starting from piloting at institutional level and launching legislation frameworks at national levels.

Methodology

The National Impact Study was conducted in the period of February 2021 – April 2021 on the base of several methods: survey, desk analysis and focus groups with experts on higher education in Kyrgyzstan.

The aim of the national impact study is to highlight achievements and the role of the stakeholders who contributed to them and it is important to acknowledge their contributions and hard work in helping to make the programme a success.

Also, National Impact Study aims to identify potential long-term structural impact of CBHE projects on the systems, organizations and individuals; to identify innovative character, the impact and sustainability of projects' results and how they intend to maintain or develop the outcomes after the end of project.

Geographical coverage of the impact study: five oblasts of Kyrgyzstan: Issyk-Kul Oblast, Naryn Oblast, Talas Oblast, Osh and Djalal-Abad Oblast, Chui Oblast including Bishkek and Osh - that represents around 95% of Kyrgyzstan.

Target groups for impact study:

1. Teaching staff and students of higher education institutions involved in projects – total number of respondents from 19 HEIs accounted for 200 people.
2. Management and administration staff of higher education institutions – total number of respondents from 15 HEIs accounted for 40 people.
3. Leading experts on higher education – total number of respondents accounted for 25 people, representatives from the Ministry of education and science, independent experts and professors in the field of higher education.

Primary data collection has been implemented mainly through online questionnaires due to COVID-19 pandemic on https://docs.google.com. Online data collection caused some delays and mistakes in filling the data in questionnaires.

For data collection three types of questionnaires have been developed:

1. Questionnaires for teaching staff and students
2. Questionnaires for university administrations
3. Questionnaires for experts in higher education and employers

The text of questionnaires is presented in the Annex 2.

The coverage of impact study covered 16 capacity building projects implemented in the period of 2015-2018. The number of HEIs participated in the study was 19 HEIs from Kyrgyzstan and 39 participation instances analysed.

№	Project title	Year	Kyrgyz HEIs involved
1	CANERIEH 530634 -TEMPUS- 1 -2012- 1 -KG-JPHES "Central Asian Network for Education, Research and Innovation in Environmental Health"	2012	• International School of Medicine • Osh State University
2	561894-EPP-1-2015-1-DE-EPPKA2-CBHE-JP Advancing University Education in Biomedical Engineering and Health Management in Kyrgyzstan (KyrMEDU)	2015	• N. Isanov Kyrgyz State University of Construction Transport and Architecture • I. Razzakov Kyrgyz State Technical University • I.K. Akhunbaev Kyrgyz State Medical Academy • Osh State University • S. Namatov Naryn State University • K.Tynystanov Issykkul State University • Talas State University
3	561832-EPP-1-2015-1-LV-EPPKA2-CBHE-SP European Dimension in Qualifications for the Tourist Sector (EurDiQ)	2015	• ADAM University (Bishkek Academy of Finance and Economics) • K.Tynystanov Issykkul State University • Ministry of Education and Science of the Kyrgyz Republic
4	561724-EPP-1-2015-1-DE-EPPKA2-CBHE-JP Investing in Entrepreneurial universities in Caucasus and Central Asia (EUCA-INVEST)	2015	• M. Ryskulbekov Kyrgyz Economic University • Alatoo International University • K.Tynystanov Issykkul State University named after • University of Economy and Enterprises • Ministry of Education and Science of the Kyrgyz Republic
5	561539-EPP-1-2015-1-ES-EPPKA2-CBHE-JP Management - Innovation - Development (MIND)	2015	• J. Balasagyn Kyrgyz National University • M. Adyshev Osh Technological University • Talas State University
6	561495-EPP-1-2015-1-AT-EPPKA2-CBHE-JP	2015	• I. Arabaev Kyrgyz State University

	Central Asian Center for Teaching, Learning and Entrepreneurship (CACTLE)		• International University of Kyrgyzstan • J. Balasagyn Kyrgyz National University • Ministry of Education and Science of the Kyrgyz Republic
7	561841-EPP-1-2015-1-IT-EPPKA2-CBHE-JP International University Cooperation on Land Protection in European-Asiatic Countries (IUCLAND)	2015	• I. Razzakov Kyrgyz State Technical University • M. Adyshev Osh Technological University
8	573640-EPP-1-2016-1-IT-EPPKA2-CBHE-JP STrengthening Network EdUcaTiOn,Research and Innovation in Environmental HeALth in Asia (TUTORIAL)	2016	• International School of Medicine • Osh State University
9	573897-EPP-1-2016-1-BG-EPPKA2-CBHE-JP "Professional Bachelor in open and distance learning for the development of sustainable tourism in China, Vietnam and Kyrgyzstan" (LMPT)	2016	• Adam University (Bishkek Academy of Finance and Economics) • M. Ryskulbekov Kyrgyz Economic University • K. Tynystanov Issyk-Kul State University • Ministry Of Education And Science Of The Kyrgyz Republic
10	574005-EPP-1-2016-1-LV-EPPKA2-CBHE-JP Higher Education for Central Asia Food Systems and Standards (HECAFS)	2016	• I. Razzakov Kyrgyz State Technical University • M. Ryskulbekov Kyrgyz Economic University
11	574099-EPP-1-2016-1-IT-EPPKA2-CBHE-SP Paving the way to interregional mobility and ensuring relevance, quality and equity of access (PAWER)	2016	• J. Balasagyn Kyrgyz National University • Osh State University • K. Skryabin Kyrgyz National Agrarian University • Ministry Of Education and Science of The Kyrgyz Republic
12	574243-EPP-1-2016-1-PT-EPPKA2-CBHE-JP Regional Objectives of Administrative Development (ROAD)	2016	• K. Tynystanov Issyk-Kul State University • I. Arabaev Kyrgyz State University • B. Osmonov Jalal-Abad State University
13	585382-EPP-1-2017-1-SE-EPPKA2-CBHE-JP Environmental Protection in Central Asia:	2017	• I. Arabaev Kyrgyz State University

14	Disaster Risk Management with Spatial Methods (EPCA)		• Osh State University
14	585967-EPP-1-2017-1-DE-EPPKA2-CBHE-JP Development of a Bologna-based Master Curriculum in Resource Efficient Production Logistics (ProdLog)	2017	• K. Skryabin Kyrgyz National Agrarian University • I. Razzakov Kyrgyz State Technical University

The impact study was conducted by the National Erasmus+ Office in Kyrgyzstan and by assistance provided by the Network of international relations departments of higher education institutions in Kyrgyzstan, university administrations and higher education reformation experts team.

Also the National Erasmus+ Office in Kyrgyzstan is expressing its gratitude to all students, teaching staff and students who took their time to respond to questionnaires and calls.

Assessment of the impact at individual level

This section presents the results of the faculty survey to determine the institutional and structural impact of the project results at the faculty level. The study included the representatives of the teaching staff from 19 universities of the Kyrgyz Republic, covered by the Erasmus + CBHE projects. The number of respondents covered by the survey is 95 teachers. The percentage of universities represented in the study is shown in the following picture.
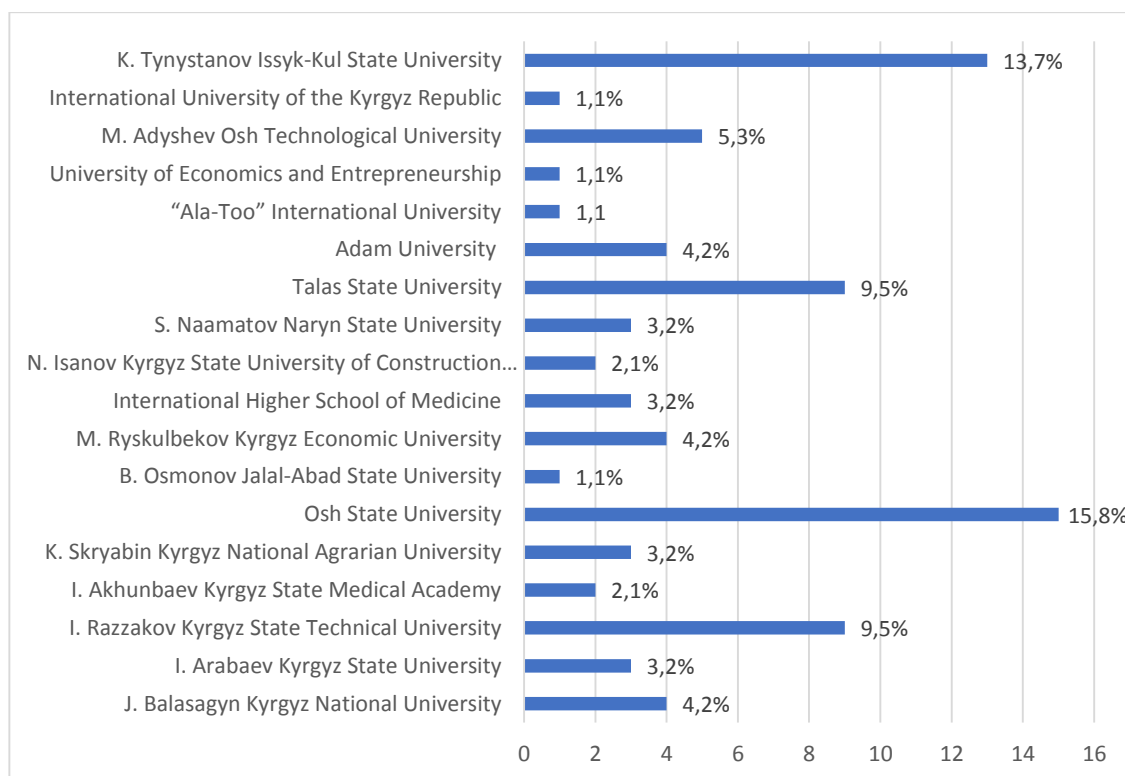

Figure 1. What is the name of your institution of higher education?

The most active are teachers from the projects KyrMedu 2015 (29%), LMPT 2016 (21%), EurDIQ 2015 (17%), MIND 2015 (16%) and ROAD 2016 (15%). A detailed description of the representation of projects in which the interviewed teachers are involved is shown in Figure 2.
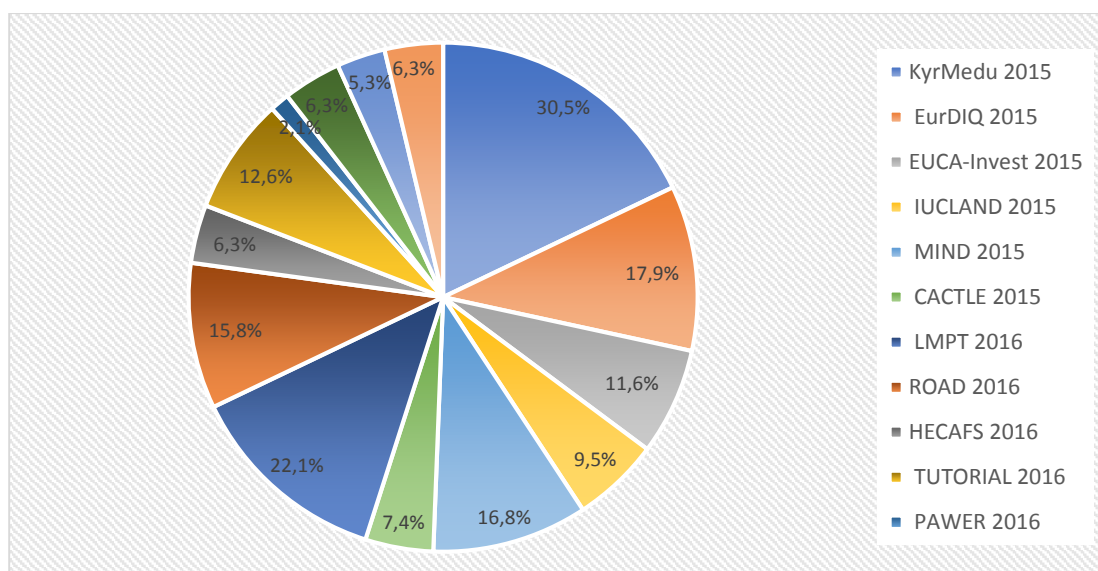
Figure 2. In which Erasmus + projects did your University take part?

The list of departments represented in the study, where the interviewed respondents work, is given in the following table.

Table 1. What department do you work in? Please write the name of your department

№	Name of the Department	Number of the respondents
1.	Pathology of basic and clinical pharmacology	5
2.	Mathematics Physics and Informatics	15
3.	Bioengineering	3
4.	Public health	3
5.	Anatomy histology and normal physiology	1
6.	Philology, regional studies, mathematics and computer science	1
7.	Economics management and marketing	14
8.	Geography	3
9.	History	1
10.	Mechanical Engineering	2
11.	Pedagogy	1
12.	Department of Finance and Financial Control, KEU	1
13.	International department	4
14.	Merchandising, commodity expertise and restaurant business	1
15.	German language	1
16.	Processing technology of agricultural products	2
17.	Academic department	1
18.	Canning technology	1

19.	Mechanics	1
20.	Telematics	1
21.	Kyrgyz European faculty	2
22.	Tourism	7
23.	Department of Humanities and Basic Sciences	6
24.	Logistics	2
25.	Department of Fundamental and Clinical Physiology	1
26.	Quality control	1
27.	Ecology and environmental protection	4
28.	Foreign language	2
29.	Biology	1
30.	Did not indicate the name of the department	7
	Total	**95**

Qualitative composition of the teaching staff who participated in the study is presented as follows: about half of the respondents have scientific degrees, of which approximately every third respondent (33.7%) is a candidate of sciences, every tenth respondent is a doctor of sciences (11.6%) and in some isolated cases, PhD doctors (2.1%). The data is shown in Figure 3.
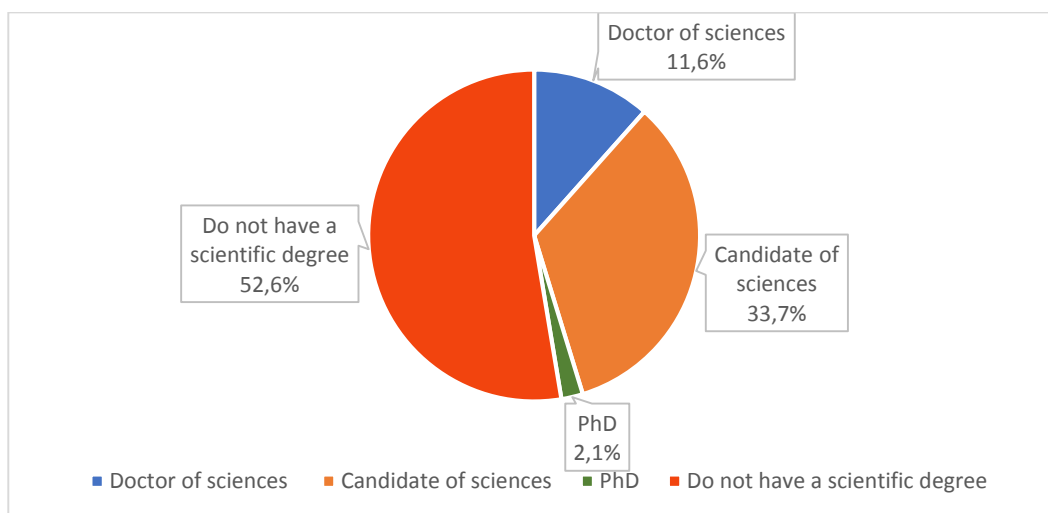

Figure 3. What is your scientific degree, indicate if any?

The respondents in the positions of senior teacher (23.2%), teacher (26.3%) and associate professor (24.3%) are approximately equally represented. Half the number of professors (13.7%) and respondents from leading positions (12.6%) took part in the study. The data are presented in Figure 4.
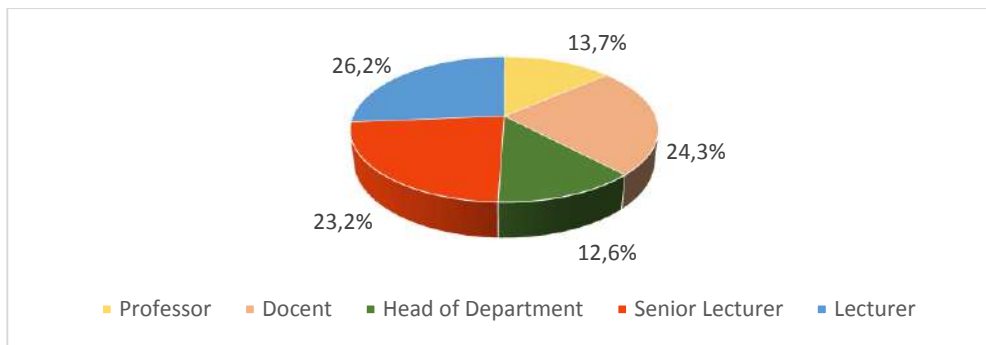
Figure 4. Position of respondents

In terms of gender, 58.9% of women and 41.1% of men took part in the survey. See Figure 5.
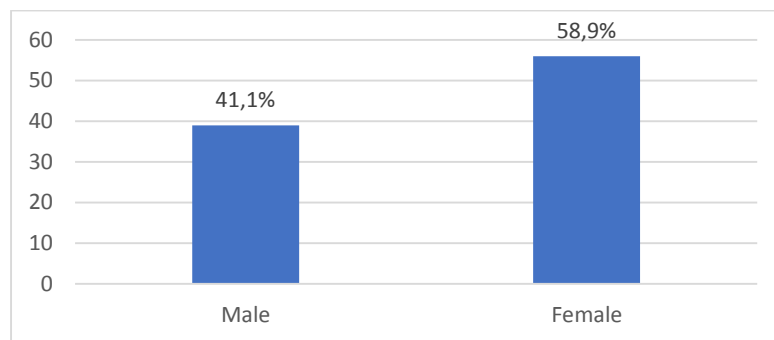
Figure 5. Gender of the respondent

Analysis of the age characteristics of respondents shows that the most active participation in the study was taken by teachers in the age category 40-49 years (36.8%), 50-59 years (30.5%) and slightly less at the age of 30-39 years (21, one%). The data are presented in Figure 6.
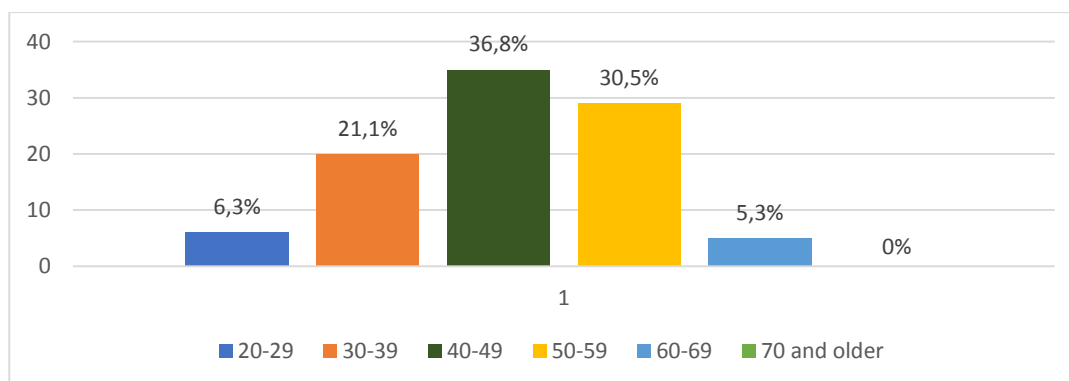
Figure 6. Age of respondents

Development and modernization of curricula / study programs

All interviewed respondents noted their participation in the development or modernization of modern curricula, depending on the level of the issuing program and the number of participations in

Erasmus + CBHE projects. All new curricula are relevant for the Kyrgyz Republic, interdisciplinary and take into account the use of computer and Internet technologies. For example, these are such educational programs as "Informatics in Healthcare", "Sustainable Cities and Localities", "Sustainable Tourism Development", "Biomedical Engineering", "Computer Architecture", "Resource Efficient Production Logistics in the Agro-Industrial Complex", "Sustainable Tourism", " Geo-Information Systems and Technologies and Remote Sensing for Disaster Risk Management "," Environmental Protection and Rational Use of Land Resources, "Information technologies in Tourism" and others. Table 2 presents a list of curricula / courses in the development of which the interviewed teachers took part.

Table 2. In the development of which educational courses or programs did you take part in the Erasmus + project at your university?

HEIs	Name of curricula/ courses
J. Balasagyn Kyrgyz National University	Methodological Guide on Mobility, Entrepreneurship Business and Development, Economics and Entrepreneurship, Management and Business Administration
I.Arabaev Kyrgyz State University	"GIS&RS for DRM", "GIS&RS for EP", "SDI for EP and DRM", Management, Microeconomics, Teaching students and teachers according to the new method of the Vienna Model
I.Razzakov Kyrgyz State Technical University	Health informatics, Technology and production of food from plant materials, Software engineering, Technical English, Logistics of production and processing of the agricultural sector, resource for efficient production logistics, Sustainable city, Technology of canned food and food concentrates.
I.Akhunbaev Kyrgyz State Medical Academy	Fundamentals of Health
K. Skryabin Kyrgyz National Agrarian University	Development of a Master's Program in Resource Efficient Production Logistics, Logistics of Production and Processing of Livestock Products
K.Tynystanov Issyk-Kul State University	Entrepreneurship, Health Informatics, Information Management, Budget and Fiscal Policy, Entrepreneurship, Urban Transport Infrastructure, Financial Control, Entrepreneurship Fundamentals, Economics and Sustainable Development, Strategic Management, Ecological Tourism, Sustainable Cities and Localities, Sustainable Tourism, Tourism Economics, Fundamentals of Health Care, Fundamentals of Hygiene in Health Care, Epidemiology and Statistics + Biometrics
The Osh State University	Public Health, Mathematics, Health Informatics, Bioengineering, Health Management, Spatial Data Infrastructure for Environmental Protection and Disaster Risk Management, GIS and Remote Sensing for Risk Management GIS and remote sensing for DRM, SDI for environmental protection and DRM Health Informatics, Environmental and Land Use, Soil Erosion

B. Osmonov Jalal-Abad State University	Strategic planning
M.Ryskulbekov Kyrgyz Economic University	Organizational Behavior, Human Resource Management and Development, Green Economy, Quality Management, Commerce, Sustainable Tourism, Green Economy Fundamentals, Lecture Teaching Methods
IHSM	Public health, Research methods in environmental epidemiology
N.Isanov KSUCTA	Biomedical engineering
NSU	Tactical Information Management, PC Architecture and Peripherals, Health Informatics
TSU	Health Informatics, Computer Architecture
«Adam" University	Sustainable development in tourism, Research methods, Management and tourism, Information technology in tourism, Business English, Microeconomics, Macroeconomics, Tourism, Strategic planning, Marketing research in tourism, Environmental management, Transport in tourism, Sustainable tourism, Business Kyrgyz language, Business Informatics, Information Technology in Tourism.
«Ala -Too" IU	Building business models
UEE	Development of a method of teaching lectures
OshTU	Environmental protection and land use, soil degradation, Informatics and programming technology, Applied informatics
IUKR	Entrepreneurship

In the opinion of the overwhelming majority of respondents, the above study programs / courses are included in the bachelor's (67.4%) and master's (55.8%) programs, in isolated cases in the PhD (5.3%) and specialist programs (5.3%). Basically, these curricula / courses have the status of "compulsory" (65.3%), and in some universities they are added to the list of "elective courses" (42.1%). There were respondents, albeit in a small number, who admitted that these programs / courses are taught at the "elective" level (8.4%). The data are presented in Figures 7 and 8.
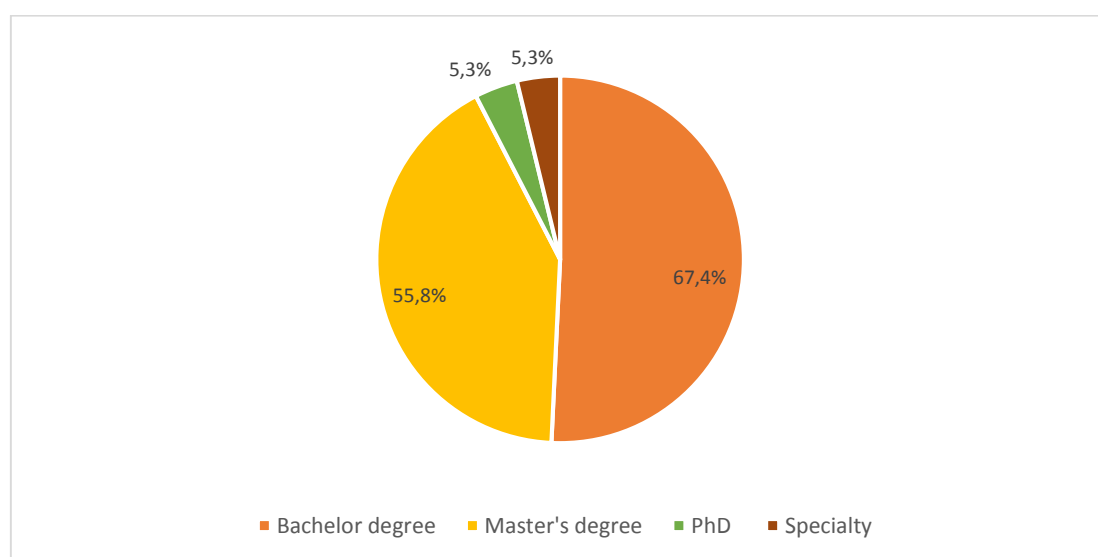
Figure 7. In what level of higher professional education are these curricula / training course included?
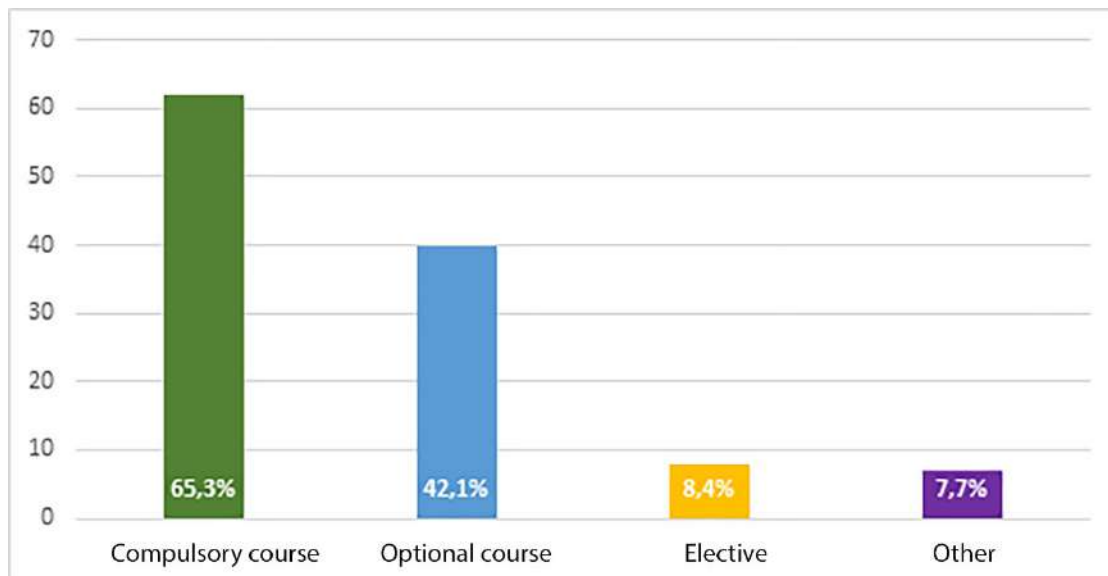
Figure 8. What is the status of these curricula /courses? (Compulsory course, Elective course, Optional)

Judging by the answers of the respondents, the overwhelming majority of the developed programs are drawn up in Russian (86.3%), in the opinion of one third - in English (34, 7%), and quite rarely the curricula are drawn up in the Kyrgyz language (13.7%). Programs in English are designed mainly for master's and PhD levels and relatively less often for bachelor's degrees. See Figure 9.
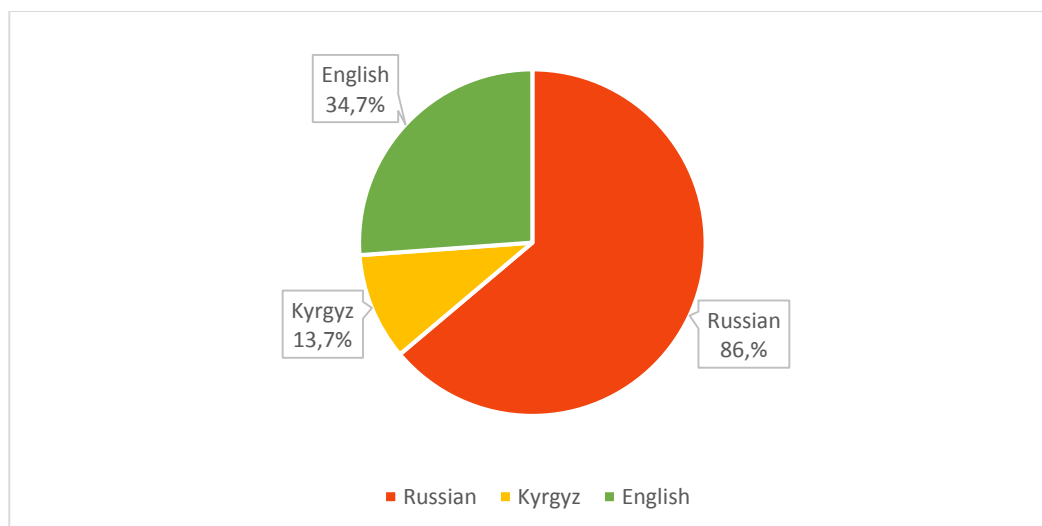
Figure 9. What language are these educational programs / training courses in?

The teachers were mainly involved in the development of 1 to 4 types of curricula / courses in the framework of the CBHE projects. Among them, almost half of the respondents participated in the development of only one curriculum / course (43.2%), every fourth respondent - in the development of 2 programs / courses (24.2%), and

approximately every tenth respondent participated in the creation of 3- 4 programs / courses. The data are presented in Figure 10.
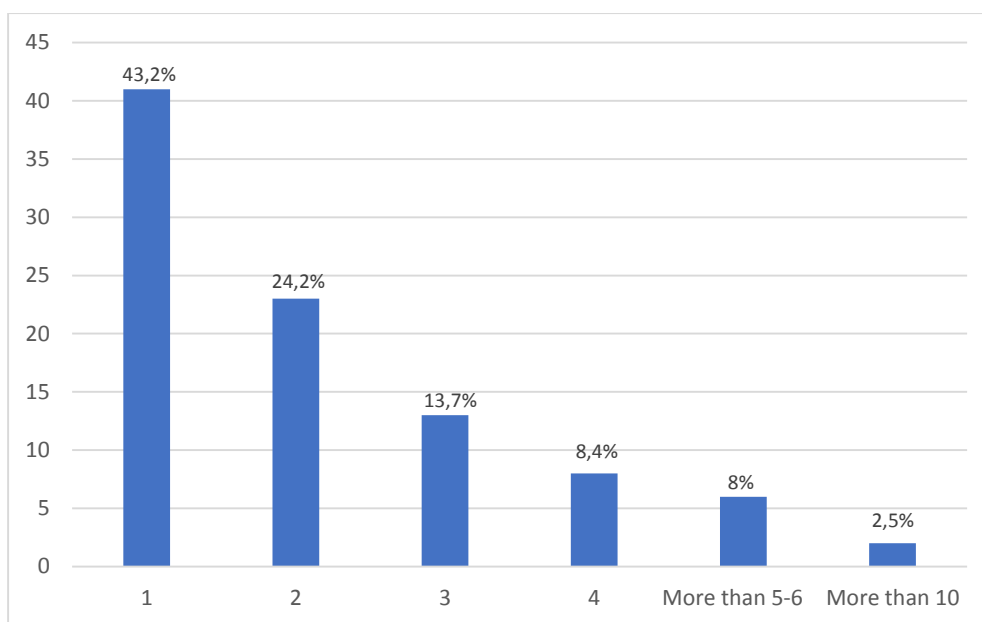
Figure 10. In the development of how many types of training courses have you participated in the Erasmus + project at your university?

More than half of the teaching staff (52.7%) participated in the modernization of any training courses. The list of courses mentioned by the interviewed teachers, in the modernization of which they participated, is presented in the following table.

Table 3. Title of the modernized courses

№	Название курса
1.	Economics
2.	Public health
3.	Environmental exposure
4.	"GIS&RS for DRM", "GIS&RS for EP", "SDI for EP and DRM".
5.	Scientific research methodology
6.	Agricultural quality and safety control
7.	Informatics in health care
8.	Methodological foundations and geographic research methods
9.	Methods of teaching entrepreneurial skills
10.	GIS and RS for DRM
11.	Logistics of production and processing of livestock products
12.	Logistics of production and processing of crop products
13.	VR (Virtual Reality) Technologies

14.	Computer science
15.	Tourism principles
16.	History of economic development in Kyrgyzstan
17.	Quality Management System
18.	Information systems in health care
19.	Software engineering/ Programming
20.	Management
21.	Sustainable tourism
22.	Mathematical analysis
23.	Tactical information management
24.	Financial management
25.	Fundamentals of Entrepreneurship
26.	Business English
27.	Production logistics and processing of the agricultural sector
28.	Macroeconomics
29.	Excursion activities
30.	Ecological tourism
31.	Sustainable tourism development
32.	Concept of sustainable development
33.	Entrepreneurship
34.	Food safety management system
35.	Quality Management System
36.	Information Technologies in Tourism
37.	Fundamentals of Health
38.	Receiving and processing a signal
39.	Environmental protection and use of land resources
40.	Nature conservation

One of the beneficial effects of the CBHE projects on faculty is the opportunity to retrain or study new disciplines that are in demand in the modern labor market. The overwhelming majority of respondents (89.5%) noted that participation in CBHE projects led to retraining or the study of new interdisciplinary areas. The data are presented in Figure 11. 82.9% of the interviewed teachers took

advanced training courses and half of the interviewed respondents studied new directions in the framework of their academic interests (49.4%).

In the opinion of about a tenth of the interviewed teachers, due to their participation in CBHE projects, they retrained from one direction to an attractive other direction for themselves (9.2%), which confirms the clear positive impact of the project on the choice of demanded professional orientations of teachers. See Figure 12.
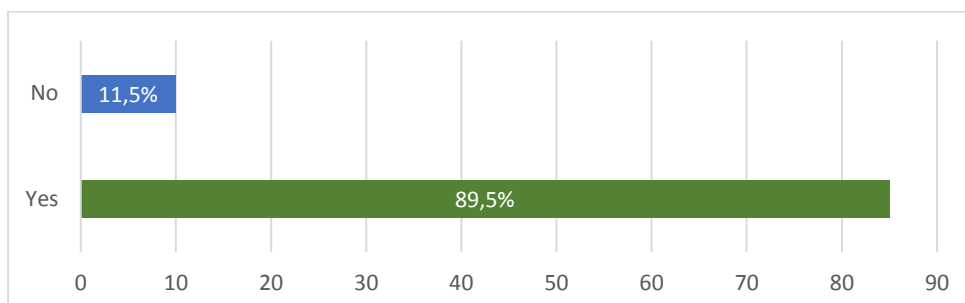
Figure 11. Has your participation in the project led to your retraining or the study of new interdisciplinary areas?
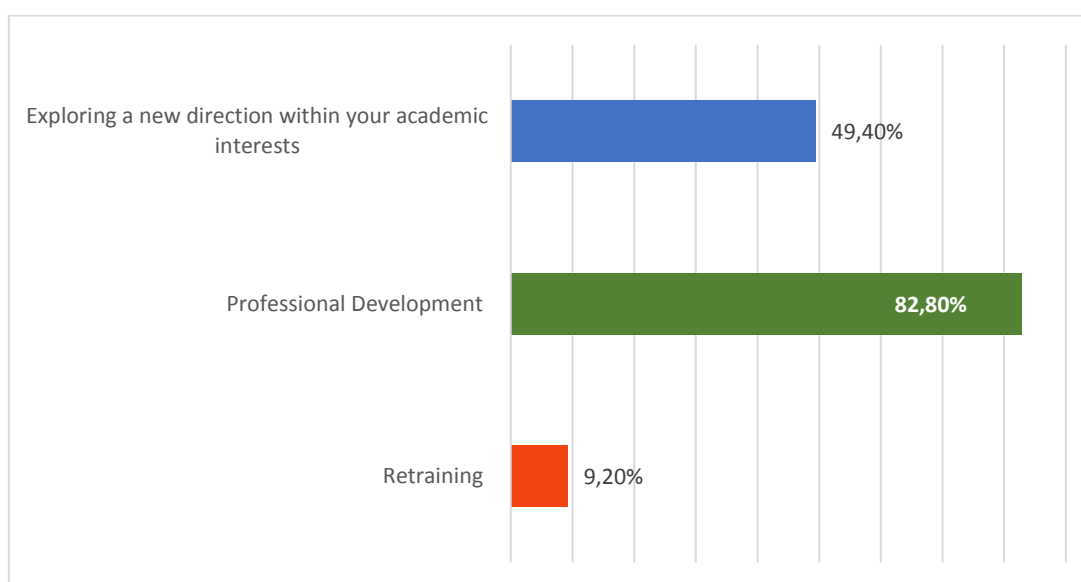
Figure 12. What exactly led to, please mark the required option.

A list of interdisciplinary courses mentioned by interviewed teachers, in the development of which they participated, is presented in the following table.

Table 4. In the development of which interdisciplinary course / program have you taken part?

Course name
Economics
Event management

Public service and economics
Tourism Marketing
Health Informatics / Health Information Systems
Environmental exposure
Health strategy and planning
Public health
Organizational behavior
Work, organization and society
"GIS&RS for DRM", "GIS&RS for EP", "SDI for EP and DRM".
Epidemiological studies in environmental health
Research Methods in Environmental Epidemiology
History of Kyrgyzstan
Health informatics
Green economy
Waste management
Computer architecture
Moodle
Design and organization of storage and processing systems
English
Biology
Strategic planning
Entrepreneurship in industries
Organization of business activities
SDI for EP and DRM
Spatial Data Infrastructure
GIS and RS for Environmental Protection
GIS and RS for Disaster Risk Management
Entrepreneurship
Sustainable Tourism / Sustainable Tourism Development
Design and organization of storage systems
Simulation modeling of logistics processes

How to make a business plan
Epidemiology, biometrics and statistics
Food safety management system
Software Engineering / Computer Science / Programming
Tourism management
Management
Tactical information management
Urban transport infrastructure
Strategic management
Ecology and tourism
Information technology in tourism
Business English
Logistics of production and processing of the agricultural sector
Tourism
Project management
Concept of sustainable development
Logistics processing of agricultural products
Change and intercultural governance
Fundamentals of Entrepreneurship for adults
Global Gap
Business Informatics
Web programming
PCR diagnostics of infectious diseases
Telemedicine
Fundamentals of programming languages
Receiving and processing signal and image
Computer science and programming technology
Environmental protection and use of land resources
Curriculum of the master's program in the direction of "Ecology and nature management"

The overwhelming majority of respondents (77.9%) noted that online training systems have been designed for the courses / programs they have developed within the framework of the Erasmus + project, which allows us to summarize that the CBHE projects have contributed to the active introduction of online tools into the learning process and will ensure a long-term positive result of implementation and better mastering of knowledge and skills. The data are presented in Figure 13.
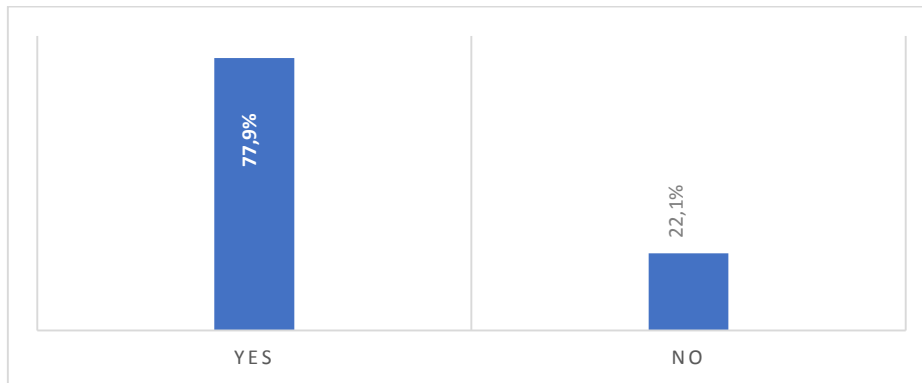
Figure 13. Have online learning systems been designed for the courses / programs you have developed under the Erasmus + project?

Most often, respondents noted the Moodle (52.6%) and AVN (35.8%) systems as online learning systems to provide students with access to the developed courses. Other responses in isolated cases included iMSEP, Zoom, Google Classroom, EebEx, and Cisco. The data is presented in Figure 14. The interviewed teachers, in general, highly appreciated the quality of the developed methodology for course development in which they participated. (49.5% of the respondents marked "four" and 43.2% marked "five".) For more details, see Figure 15.
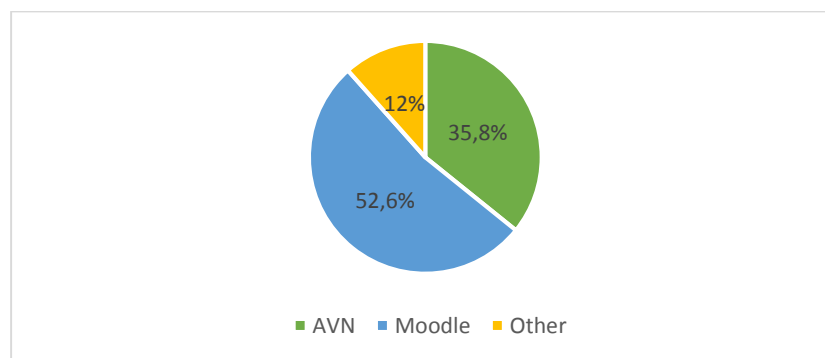
Figure 14. What online learning systems have been used to provide trainees with access to these courses?
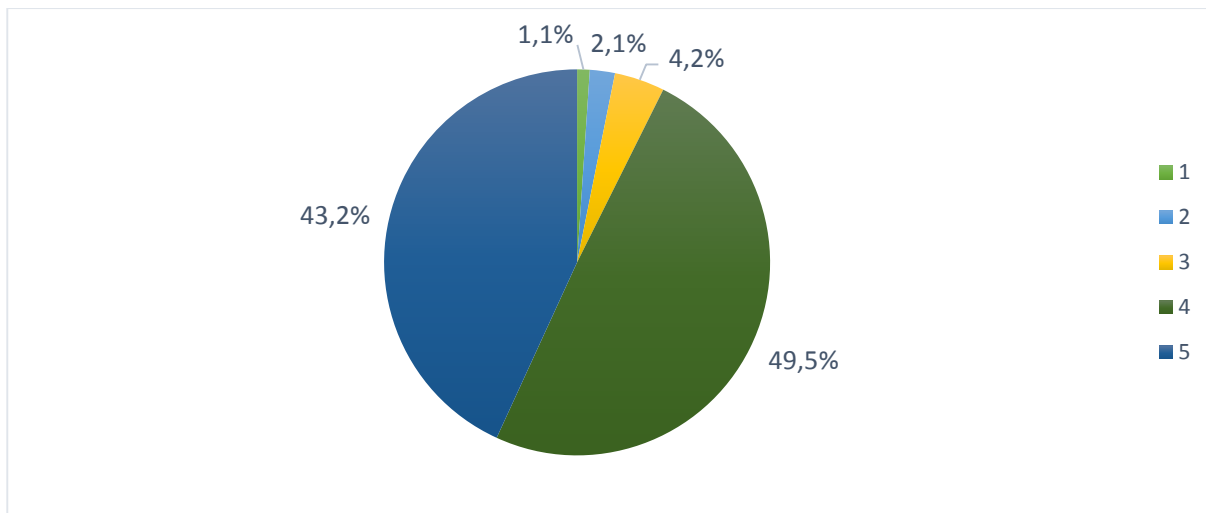
Figure 15. How satisfied are you with the quality of the course development methodology that you participated in? (Rate 1 to 5, where 1 is the lowest level of satisfaction and 5 is the highest level of satisfaction).

The interviewed teachers received tremendous benefits for themselves from participating in Erasmus + projects. Judging by their answers, they exchanged experiences and opinions on the content, methods and approaches to training programs (80%), were able to share the acquired knowledge and improve their professional skills and abilities, practices in participating in the CBHE projects (69.5%). According to 67.4% of respondents, there is an opportunity to use innovative tools and work technologies developed within the framework of the project. There were positive changes for students and graduates. Thus, thanks to the introduction of new or improved training courses within the framework of CBHE projects, the number of students enrolled in the educational program (37.9) and the number of employment of graduates in specialization (16.8%) increased. The data are presented in Figure 16.
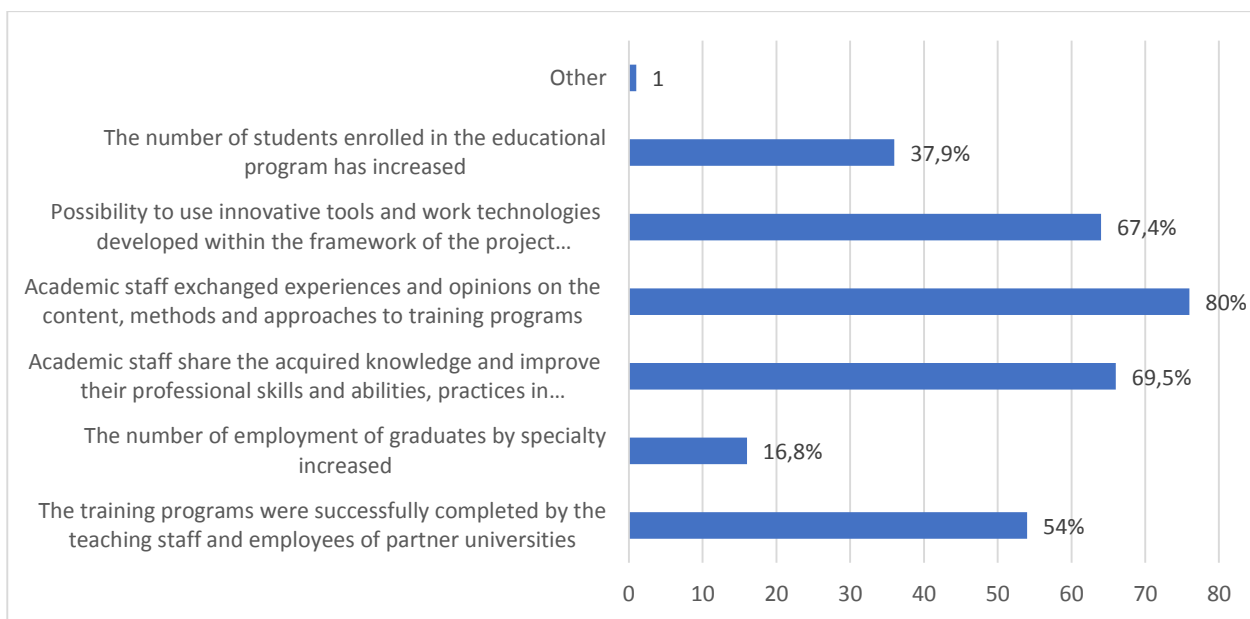
Figure 16. What are the results of the implementation of the developed courses within the framework of the Erasmus + projects?

Acquired skills

The overwhelming majority of the interviewed teaching staff (85.3%) completed the training (refresher courses) required to work in the framework of CBHE projects, see Figure 17. Of these, most of them noted the passage of specialized courses on the issuing program and courses on the development of courses and implementation online and distance tools / platforms Moodle, iMSEP in the educational process. Quite often, the respondents mentioned taking courses on methods of innovative forms of teaching / interactive educational technologies / kahoot / pedagogical skills / methods of statistical calculations. For more details on the references to the courses taken, please see the following table.
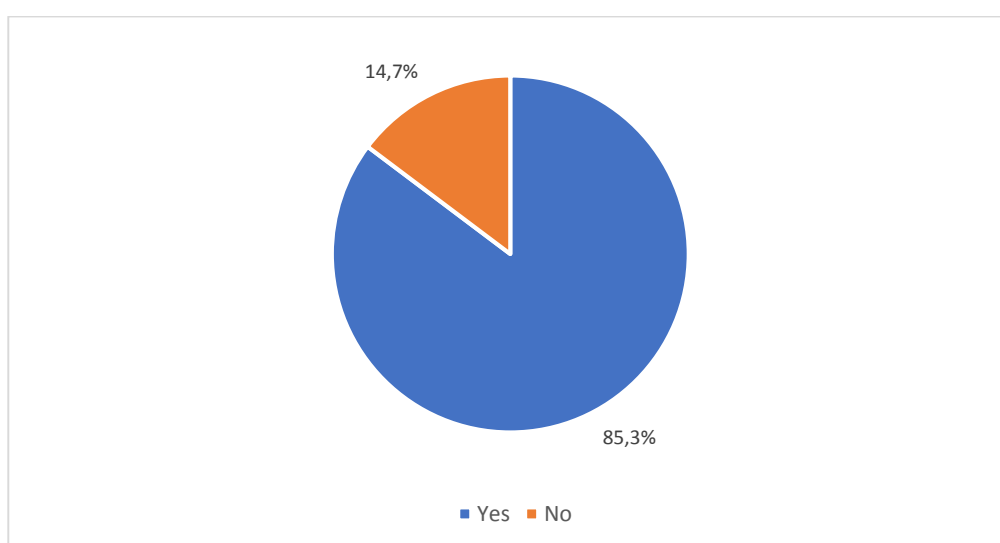
Figure 17. Did you have the opportunity to attend the training (advanced training courses) required for your work in the framework of the CBHE project?

Table 5. What refresher courses / training did you take (participation in trainings, seminars)?

Course title	Number of mentions
English language courses	4
Methods of innovative forms of teaching / interactive educational technologies / pedagogical skills / kahoot / methods of statistical calculations	8
Specialized courses for the graduate program	34
Course development and implementation in online and distance tools / platforms Moode, iMSEP	12
IT in teaching / IT for GIS	1
Workshop on Qualifications Framework	2
Preparation of syllabus	2
Training on working with new equipment	1
Internationalization of education	1

Strategic planning	3
Soft skills development / business communication	2
Academic writing / academic honesty in online learning	2
International scientometric databases	1
Antiplagiat	1
Summer schools, seminars in foreign universities / webinars	4
Total	78

As the results of the study show, participation in CBHE projects contributed to the acquisition / improvement of both "soft" and "hard" skills among the surveyed teaching staff. According to the overwhelming majority of teaching staff, first of all, the respondents improved their communication skills (69.5%) and technical / IT-skills (67.4%). Approximately every second respondent surveyed confirmed an improvement in such instrumental skills as project management skills (44.2%) and research skills (41.1%). Approximately every third interviewed respondent noted an improvement in intercultural competences (41.1%), special competencies / knowledge by profile (37.9%) and linguistic skills (36%).

The respondents also noted an improvement in social competencies (30.5%), skills in developing innovations, start-ups, entrepreneurial skills (29.5%) and skills for transforming problems into projects (28.4%). One in four interviewed respondents confirmed an improvement in transverse / behavioral skills (23.2%), networking skills, cooperation and partnerships to promote the overall objectives of the project (23.2%). Every tenth respondent noted an improvement in their skills in marketing and promoting a product or service) (13.7%). The data are presented in Figure 18.
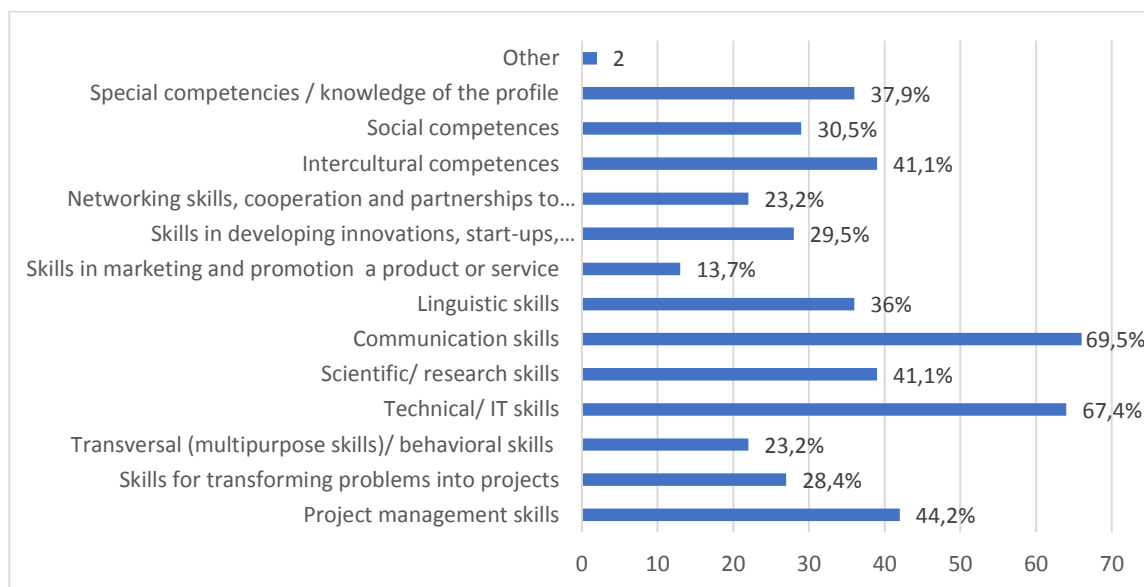
Figure 18. What skills and competencies have been acquired / improved within the framework of the CBHE project (List the skills you acquired within the framework of the Erasmus + project)

Most of the interviewed teachers use these skills in the development of training courses / curricula / modules (77.9%) and the development of educational methodologies, guidelines, methods, approaches to teaching and assessing knowledge (67.4%). Half of the surveyed respondents use these skills in research / analysis (publication / literature review, etc.) (53.7%) and creation of

services (e-learning platforms, educational resources, databases, etc.) (50, five%). 40% of the surveyed respondents use the acquired skills in building and strengthening partnerships, networks of institutions / professionals, virtual communities. The data are presented in Figure 19.
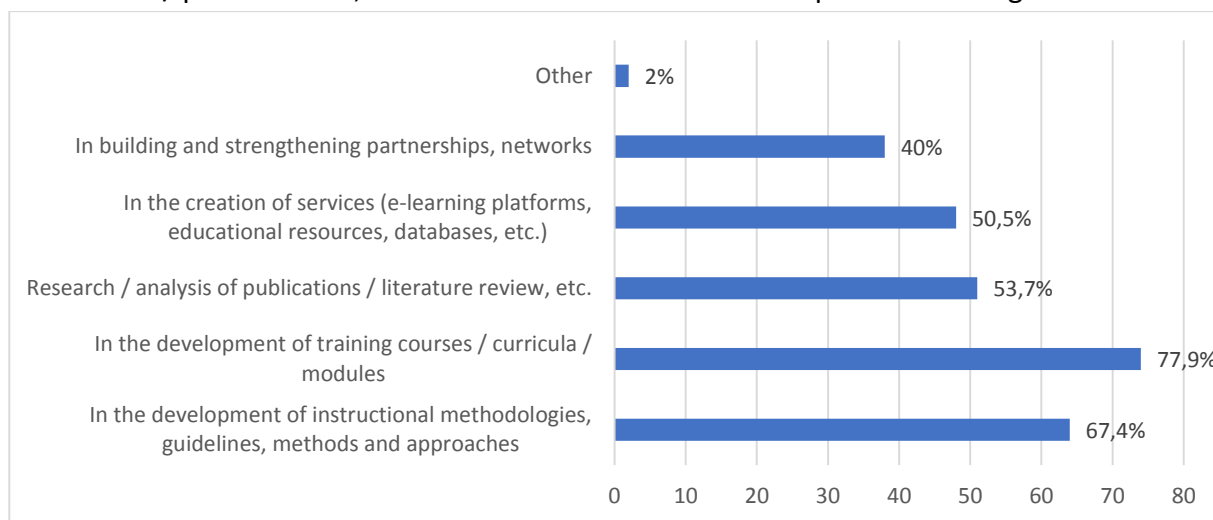
Figure 19. How do you use these skills in practice?

Almost all of the interviewed respondents noted the existence of the necessary conditions for obtaining unimpeded information necessary to perform work on the developed courses (98.9%). As the results of the study showed, the project working group accepted the proposals, took into account the practical needs of teachers: "always" (47.4%) and "often" (46.3%), which indicates sufficient sensitivity and active feedback from project participants. See Figure 20 for more details.
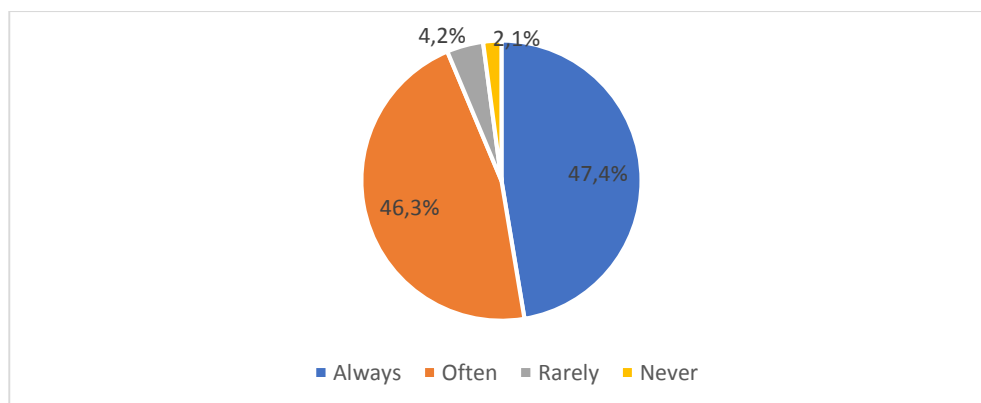
Figure 20. How often did the project team accept your proposals, took into account your practical needs?

The organization of language courses is a great achievement in the implementation of CBHE projects for the teaching staff of the University. 76.8% of the respondents confirmed the organization of such courses for them. An analysis of the respondents' self-assessment of their knowledge before and after the completion of language courses shows an improvement in indicators for many levels of language knowledge by one and a half to two times during the course of the course, in some cases, an increase in knowledge by three times.
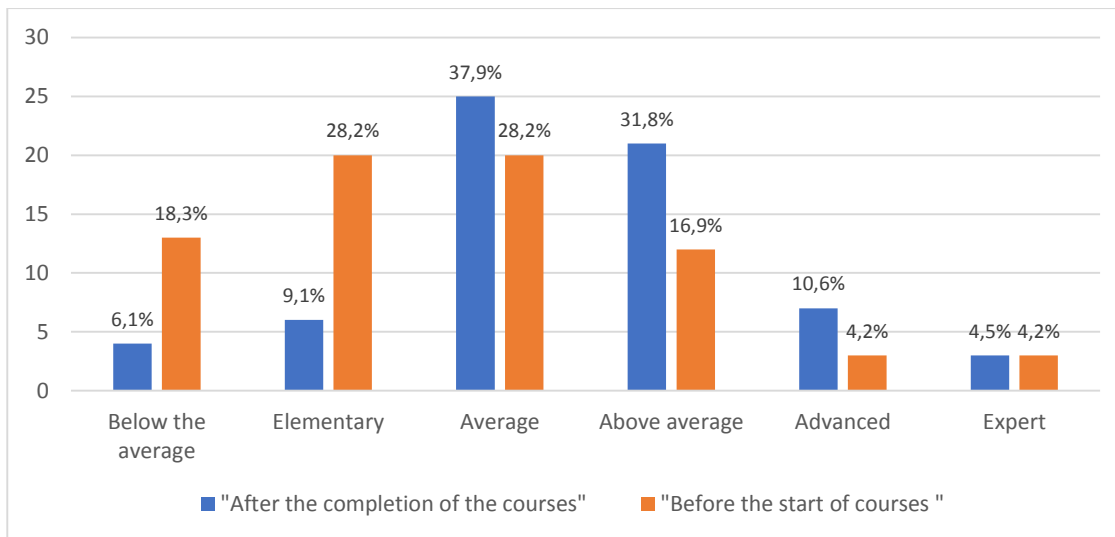
Figure 21. How do you assess your language skills before starting these courses?

The self-assessment analysis of the contribution of the project components to the professional development of the teaching staff showed the following results. In this question, the contribution of each project component was rated from "1" to "5", where "1" is the lowest level of contribution / influence / impact and "5" is the highest level of contribution / influence / impact. The highest level of contribution was noted for the positions "Improving the material and technical base of the university" (51%), "Intercultural communication" (43%), "Implementation of innovations, ICT technologies" (42%) and "Participation in international cooperation" (42 %), as well as "Academic mobility" (40%).

A good level of project contribution was noted for the positions: "Introduction of new methods and approaches of teaching" (26%), "Language learning" (23%) and "Development of products and services" (21%). As can be seen from these data, all components of the project received a positive impact assessment from "3" to "5" points. The data are presented in Figure 22.
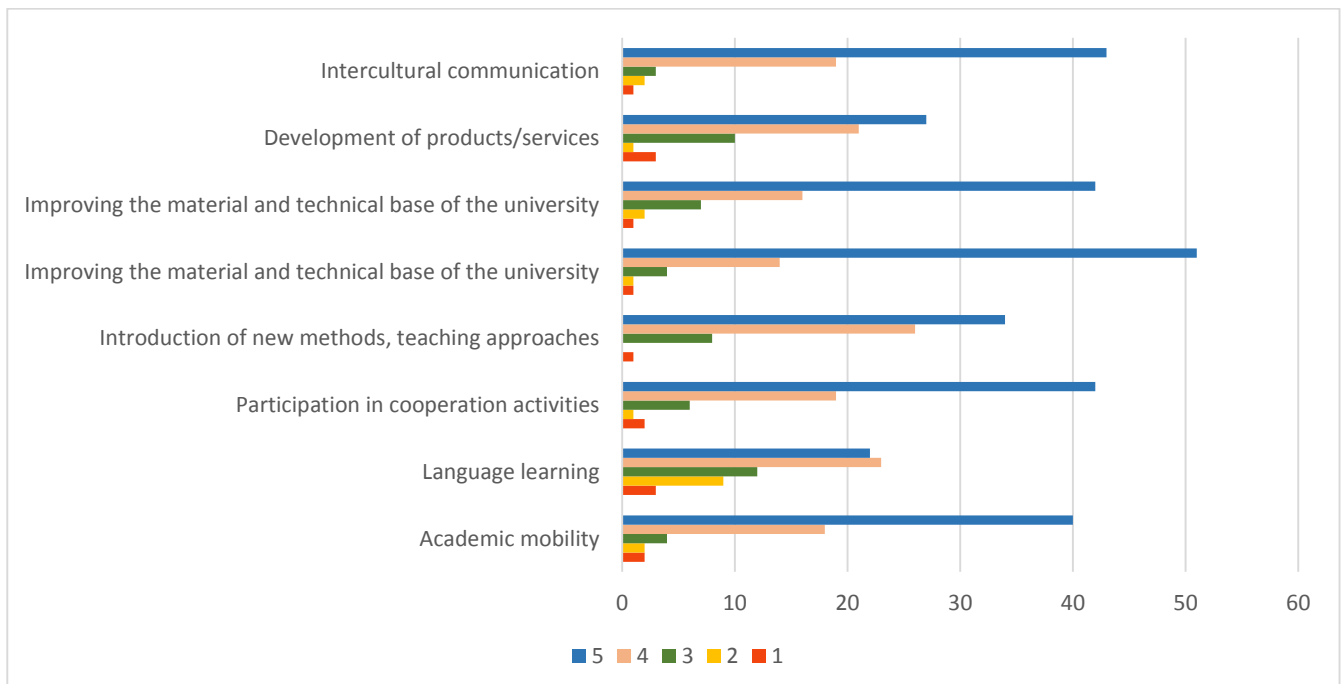
Figure 22. How would you rate the contribution of the project components to your professional development?

Impact of partnerships between universities

Judging by the answers of the overwhelming majority of the respondents, the CBHE projects contributed to active cooperation both between the universities of Kyrgyzstan (87.4%) and with foreign Universities (89.5%). Also, cooperation is being established with professional and industry associations (42.1%) and government agencies and departments (41.1%). See Figure 23.

The most effective form of cooperation in the opinion of the interviewed teaching staff is the joint development of the curriculum / courses (73.7%), the creation of a laboratory (57.9%) and the organization of guest lectures (51.6%). At the same time, approximately every third respondent noted the organization of summer and winter schools as the most effective form of cooperation (28.4%), and for a quarter of respondents effective cooperation was carried out on the implementation of the Bologna process (23.2%). The data are presented in Figure 24.
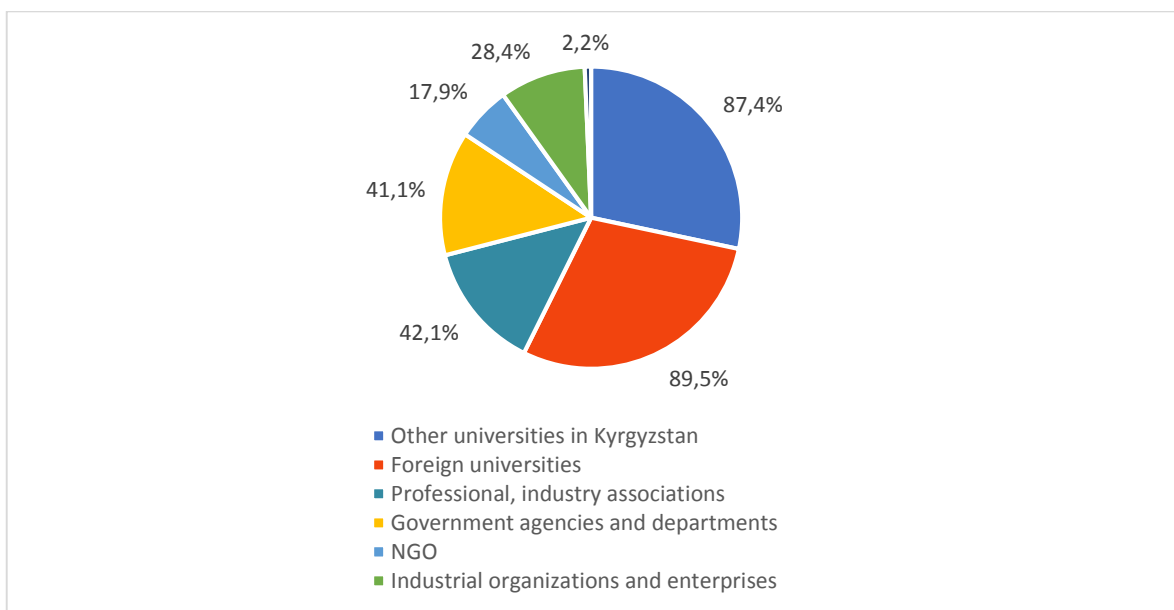
Figure 23. What organizations have you collaborated with/has your university collaborated on in the framework of CBHE projects?
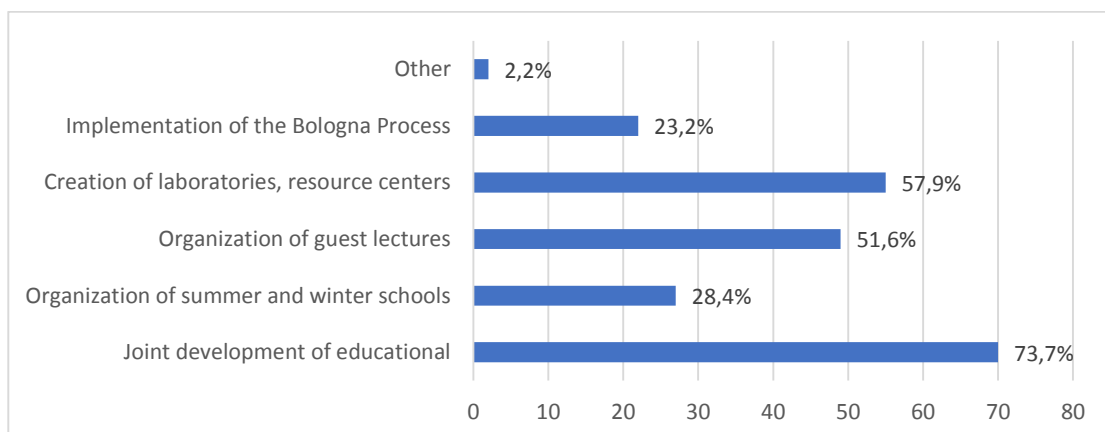
Figure 24. What are the most effective forms of cooperation in your opinion (no more than three answers):

More than half of the surveyed respondents rated the level of partner interaction of their university as "five" in achieving project results (64.2%) and a third of the respondents rated this indicator as "four" (31.6%). The data are presented in Figure 25. At the same time, in the opinion of the overwhelming majority of the surveyed teaching staff (87.4%), this interaction continues at the present time (upon completion of the project).

For example, cooperation continues in building networking, networking between partner universities, sharing experience, practices and continuing to develop curricula, courses, as well as organizing guest lectures, trainings and conferences in an online format. The interviewed teachers conduct scientific research and jointly prepare articles and publications.

For example, cooperation continues in building network work, networking between partner universities, sharing experience, practices and continuing to develop curricula, courses, as well as organizing guest lectures, trainings and conferences in an online format. The interviewed teachers conduct scientific research and jointly prepare articles and publications.
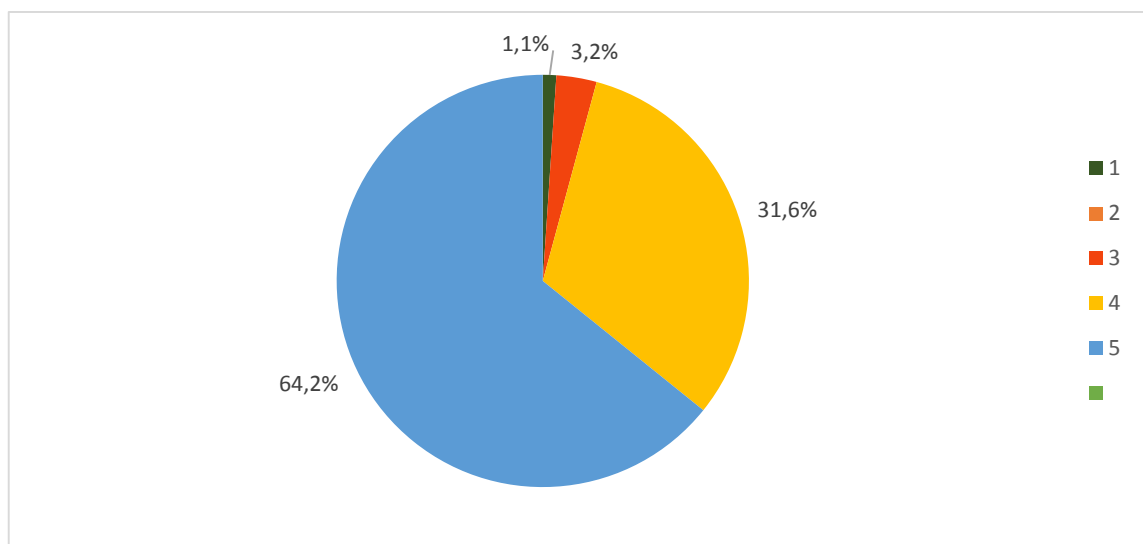
Figure 25. How do you assess the level of interaction of your university in achieving the results of the project?

Project dissemination

The effectiveness of project implementation depends to an important extent on the level of prevalence of project results. In the course of the study, 35% of respondents noted that they participated in conferences / events from 1 to 3 times to present the results of projects of their universities. 28.5% of respondents participated with a presentation in more than 20 conferences / events and 25% of respondents presented the results of projects at conferences / events from 3 to 6 times. 11% of respondents presented the results of projects in different events from 10 to 15 times.

Participation in Erasmus + projects contributed to a varying degree to the publication activity of the interviewed teachers. According to the results of the study, 73% of the surveyed faculty members published their works in the framework of CBHE projects. More than half of them were published from 1 to 3 times, 8.4% from 4 to 6 times and 4.2% of respondents had from 10 to 15 publications

within the framework of Erasmus + projects. One respondent from KEU noted that she participated in more than 50 publications / studies within the framework of the CBHE project

Participation in CBHE projects led to increased capacity and in the form of improved material and technical equipment of Universities. Almost all of the interviewed respondents confirmed the purchase of basic equipment (computer, printer, laptop, server, Wi-Fi router) (95.8%) within the framework of the CBHE projects. According to the overwhelming majority of respondents, multimedia products (interactive board, projector, Pirogov table, etc.) (65.3%). More than half of the teachers surveyed noted the purchase of equipment for resource centers (54.7%). A significant number of respondents noted that educational and methodological literature, monographs and other publications (43.2%) were developed and published, laboratories (38.9%) were equipped and online platforms, specialized software were developed (36.8%).

Some respondents mentioned equipping language laboratories (7.4%), purchasing reagents, substances, raw materials for scientific work (6.3%) and even subscribing to the Harvard Business Review periodical and purchasing educational literature. The data is presented in the following figure.
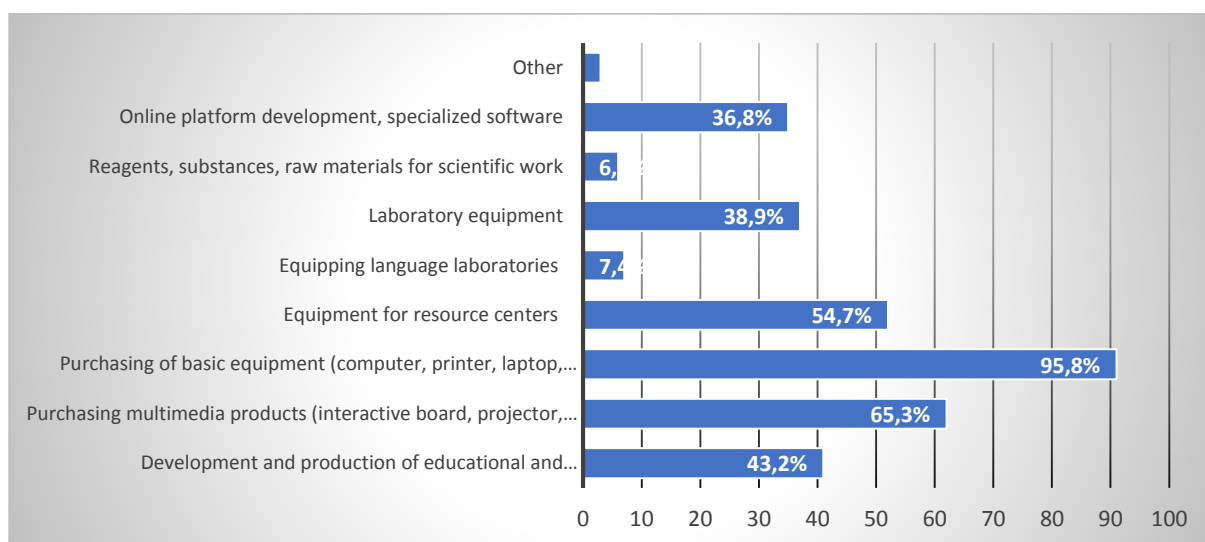
Figure 26. How has the material and technical equipment of your university improved within the framework of the CBHE project?

Most of the teachers are proficient in the use / operation of specialized equipment and programs. Among them, 36.8% are proficient at a professional level and 53.7% admitted that they rather know, but are still studying. As can be seen from Figure 27, almost all of the teachers interviewed noted that these facilities continue to function properly at the present time (For example: maintenance, supply of raw materials, renewal of licenses, etc.).
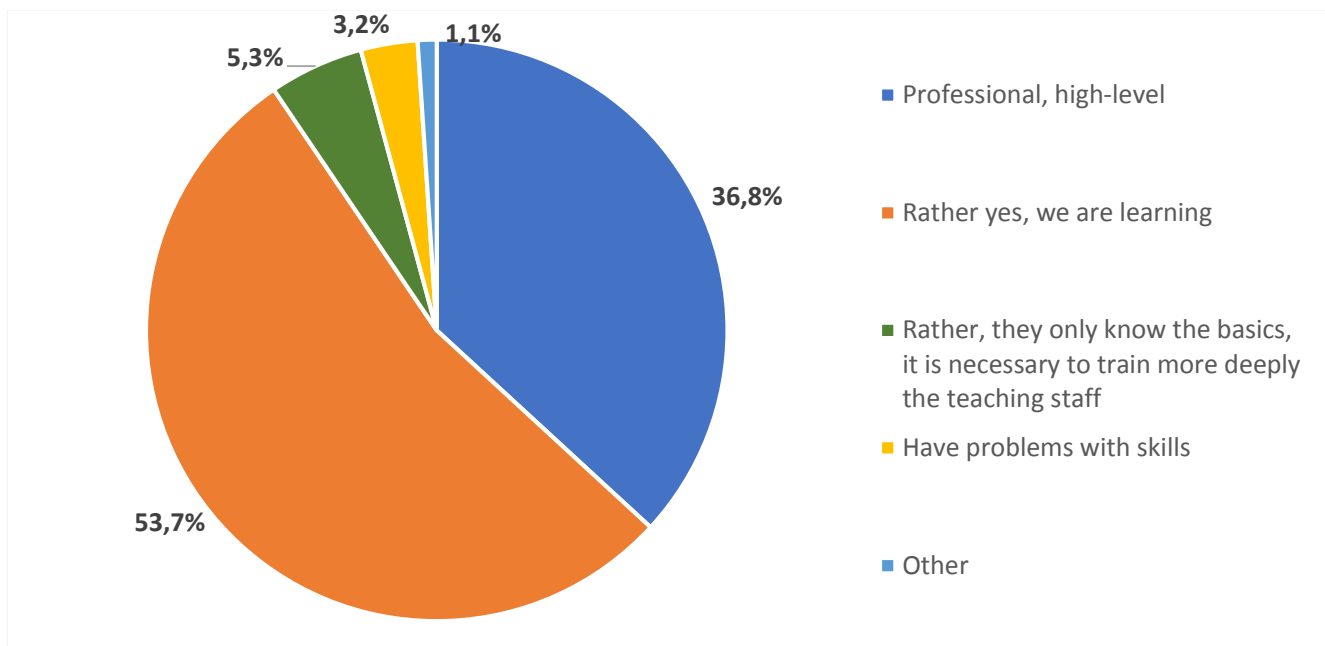
Figure 27. To what extent do you have all the skills in using specialized equipment and programs?

The most effective channels for disseminating the results of the project, in the opinion of the overwhelming majority, are the university website (89.5%), social networks (facebook, instagram, twitter, tik-tok, linkedin) (76.8%), booklets, brochures, information sheets (65.3%) and the project website (56.8%). Less popular channels for disseminating information are publications in periodicals, news agencies (29.5%) and TV, radio programs (26.3%). See Figure 28.
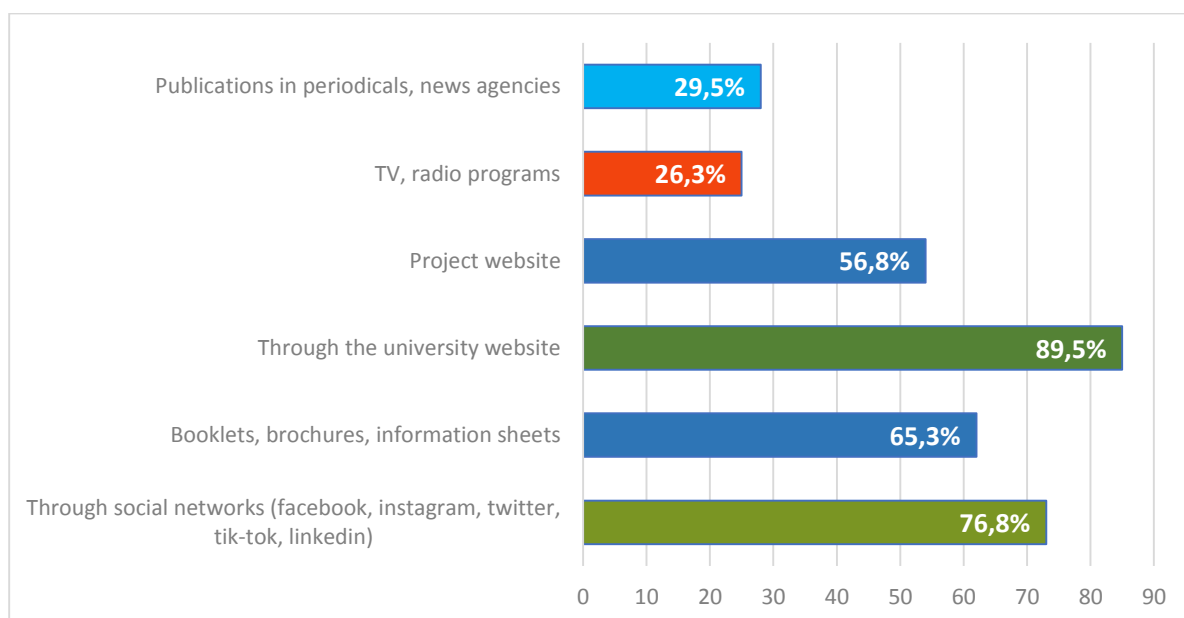
Figure 28. What channels of dissemination of information about the results of the project were the most effective? (no more than 2-3 answers)

Sustainability

The respondents unanimously confirmed that the Erasmus + projects helped the Universities to promote new initiatives in the framework of national / international cooperation. For the most part, these are memoranda of cooperation achieved with partner national and foreign universities, with manufacturing companies and the civil service and local self-government bodies (49 mentions). The sustainability of the project results is also ensured by the intensification of scientific research, the introduction of new methodological developments and joint publications (32 references).

Thanks to the Erasmus + projects, a large number of internships, training seminars and the introduction of new teaching methods have been carried out, as well as work has been established in the network, associations of universities and their partners (18 references).

Improving the knowledge, skills and abilities of the participants in the student and teacher exchange program gave good results in ensuring the sustainability of the project, many students upon arrival opened their own business and actively participated in various projects, teachers honed their teaching skills and were actively involved in the development of new and improvement of existing educational programs (5 references).

Almost all of the interviewed teachers confirmed that the programs and courses they have developed are being taught after the completion of the project. And in the opinion of the overwhelming majority (86.3%), at present, enrollment is being carried out for the bachelor's and master's programs developed within the framework of the Erasmus + project. Among those who replied that there was no enrollment in bachelor's and master's programs, there were representatives from OshSU (EPCA 2017), Adam University (EUR BIQ 2015), IUK (CACTLE 2015), ISU (ROAD 2016), ZhaSU (ROAD 2016), Osh State University (KyrMedu, 2015). The data are presented in Figure 29.
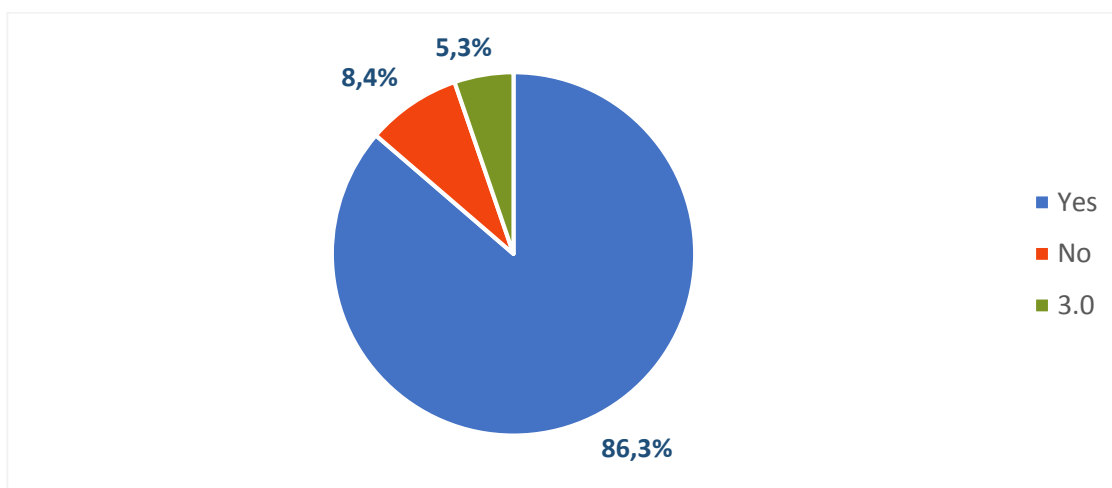
Figure 29. Is there currently enrollment for the undergraduate and graduate programs developed under the Erasmus + project?

The interviewed teachers see the most significant achievement among the students of courses and programs as the results of the project an improvement in the quality and content of the development of curricula / courses throughout the university (75.9%), established sustainable

interaction with employers (59.8%), an increase in the number of innovative multidisciplinary curricula / courses (54%).

According to opinion of half of the teachers surveyed, the results of CBHE projects led to an active spread of the student-centered approach to teaching (analysis of training needs, analysis of demand and supply of the labor market) (50%). An important achievement of the results of the project, the teaching staff noted the increase in the publication activity of the teaching staff (39.1%)

Every fourth interviewed teacher considers an increase in the number of start-up projects among students, undergraduates (26,%) and an increase in the number of employed graduates (25.3%) to be an important achievement of the project's results. For one sixth of the surveyed respondents (14.9%), reducing the gap between supply and demand in the labor market in the specialties of the Erasmus + project is an achievement thanks to the results of the CBHE project. The data are presented in Figure 30.
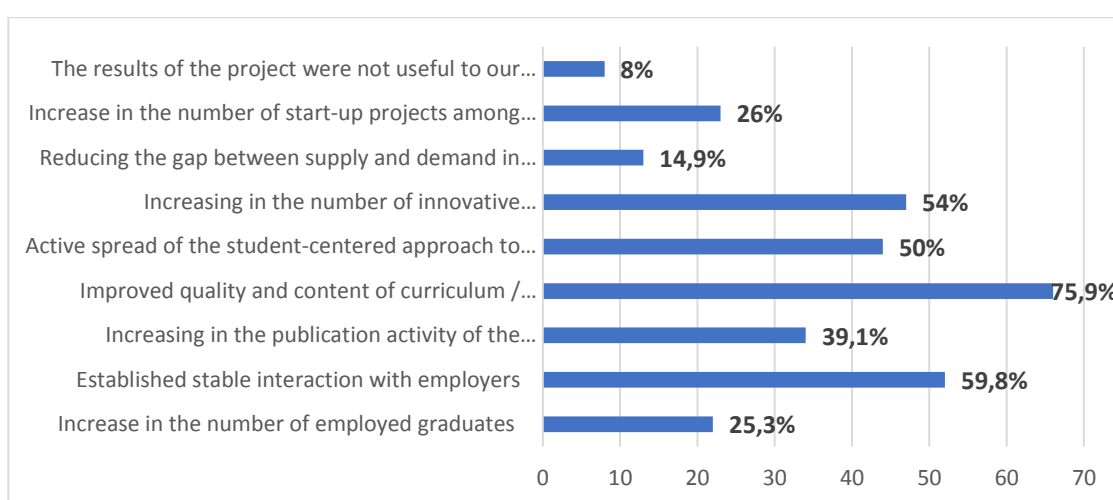
Figure 30. What achievements among the students of courses and programs have resulted from the outcomes of the project at the end?

At the end of the study, the respondents left their wishes and recommendations. They mainly expressed their gratitude to the Erasmus + National Office in Kyrgyzstan for creating opportunities and facilitating the involvement of national universities in Erasmus + projects and expressed a desire to continue to participate in such projects if more opportunity is given. A large category of the interviewed teaching staff noted that they are making plans with representatives of partner universities to reach a new level of cooperation.

According to one of the participants, *"Departments are interested in independently establishing contacts and signing agreements on mobility and cooperation with universities in the world, are also interested in submitting project proposals, cooperation in research, motivated to take part in international conferences and publish their articles abroad.*

There was competition among the departments and individuals of the teaching staff in learning of the English language, participation in projects and self-realization through Erasmus + projects. Now our KEU intends to intensify work on cooperation with foreign universities to create joint "double degree" programs. Each department will be tasked with strengthening the work on double diplomas.

Thanks to you and your efforts, the universities of Kyrgyzstan do not lag behind the trends in the development of education in the world and keep pace with the times with other universities in the world. Based on my observations, I want to assure you that slowly but surely the quality of work in universities is improving and universities are embarking on the right path of development. Great Thanks to the European Union and the National Erasmus +Office in Kyrgyzstan for all the opportunities and happy moments given to us in working with partners from all over the world!

Another participant noted that *"The project has improved the quality of teaching by improving the qualifications of teaching staff and improving the material and technical base. The project also became a good incentive for the further improvement of the professional and language skills of teachers. "*

".... It is necessary to strengthen international cooperation in the field of geo- information systems and remote sensing, since spatial methods will become the basis of research and economic activities in the near future"

Lecturer from ISU noted that *"the Erasmus + projects had a great positive impact on the development of ISU named after K. Tynystanov. First, the material and technical base of the university has improved; secondly, the potential of the teaching staff of the university has increased; and, thirdly, due to the modernization of the curriculum of some profiles, the quality of education has increased. We started developing electronic courses at the university long before the pandemic. Therefore, the work in remote mode did not cause great panic among the teachers of our university. "*

It was also noted that the CBHE projects "made a great contribution to development of higher education system both at the level of our and other universities and determined the rationality of using various resources to increase the effectiveness of training specialists of the appropriate level, and the professional development of university teachers through the introduction and application of modern educational technologies, which speaks of the relevance and necessity of carrying out similar measures to increase the educational potential of the country on a long-term basis ".

"I received a lot of useful scientific and educational information, acquired social and technical skills of interaction with various project participants, which gave me the opportunity to strengthen my scientific and pedagogical capacity to improve the quality of educational services at the university. Thank you for participation in your project. I hope for further cooperation! "

"As a result of the implementation of the projects, agreements on cooperation have been signed with higher education institutions from the EU countries, educational programs have been modernized, and classrooms have been equipped. Thanks to the projects, students and teachers have the opportunity for short-term internships and academic mobility. Many thanks and success and further cooperation. "

"A very useful project in terms of international cooperation between universities, in the creation of new academic disciplines, in equipping with educational equipment, in improving the qualifications of teachers and their language skills."

"This project made a great contribution to the system of development of higher education both at the level of our and other universities and determined the rationality of using various resources to increase the effectiveness of training specialists of the appropriate level. The professional development of university teachers has increased through the introduction and application of modern

educational technologies, which indicates the relevance and need for similar measures to increase the educational potential of the country on a long-term basis.

"This project made a great contribution to the system of development of higher education both at the level of our and other universities and determined the rationality of using various resources to increase the effectiveness of training specialists of the appropriate level. The professional development of university teachers has increased through the introduction and application of modern educational technologies, which indicates the relevance and need for similar measures to increase the educational potential of the country on a long-term basis. I received a lot of useful scientific and educational information, acquired social and technical skills of interaction with various project participants, which gave me the opportunity to strengthen my scientific and pedagogical potential to improve the quality of educational services at the university. Thank you for participation in your project. Hope for further cooperation!

"This is a very progressive program, thanks to which our university was able, along with other partners, to develop and implement an innovative educational program. This program (Informatics in Healthcare) is in good demand among students and teaching staff, and I am sure it will become a regular and demanded program at ISU".

National Impact Assessment.

This section presents the results of a survey of the administration of higher education institutions conducted in order to identify the impact of Erasmus + projects on increasing the capacity of the university at the institutional and organizational levels.

16 projects were implemented under the component of capacity building in higher education for the period from 2015 to 2018. The total number of involved universities from the Kyrgyz Republic was 18 units. In this study, 15 universities took part, many of which during the period under review participated several times in various CBHE projects. The total number of respondents from 15 universities was 26 people, since the questions of the questionnaire were answered by persons from the administration of universities and heads of faculties who participated in CBHE projects. Titles of the surveyed universities and the projects in which they took part presented in Annex 3.

Table 6. Erasmus + projects on Capacity Building in Higher Education in the Kyrgyz Republic

Year	Number of projects	Number of involved Kyrgyz HEIs
2015	6	16
2016	5	10
2017	2	4
2018	3	5
Итого	16	35

Awareness and support for CBHE projects.

Administration of KNAU Skryabin indicated that they participated in only one project ("ProdLog 2017"), although according to the publication "Erasmus +" this university was involved in the "PAWER 2016" project. The opposite situation with KSTU named after Razzakov and the International Higher School of Medicine. KSTU named after Razzakov in the questionnaire indicated participation in 5 CBHE projects, but according to publication, the university participated in 4 projects (under the question "CACTLE 2015").

The International Higher School of Medicine also indicated the project "IUCLAND 2015", but according to the publication they took part only in the project "TUTORIAL 2016". The level of awareness of the administrations of other universities turned out to be more accurate - the projects indicated in the questionnaire coincide with the projects published in the Erasmus + brochure.

Figure 31 shows the level of awareness of Universities top management (Rectors and Vice-rectors) about the progress and results of Erasmus + projects. The fact that there was full awareness on their part was noted by 88.5% of the respondents. The remaining 11.5% of the participants in the assessment believe that the awareness was at an average level - they are from Osh State University (more than 28 thousand students study) and NSU (slightly more than 3 thousand students).
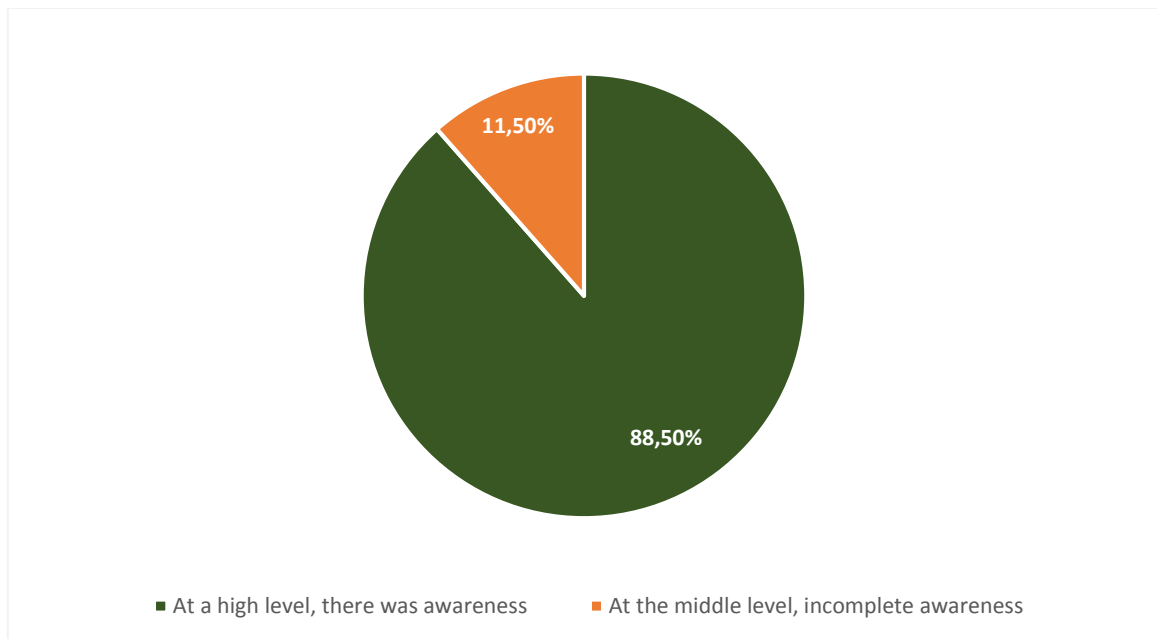
Figure 31. How aware of the progress / results of the project were the university top management?

In the same proportion, the top management of the surveyed universities took an active part in the implementation of the project, see Figure 32. It can be said that the absolute majority of the administrations of universities fully supported the departments selected for participation in CBHE projects. For example, they led the quality council, resolved bureaucratic procedures in a timely manner, thereby contributing to the successful implementation of the project.
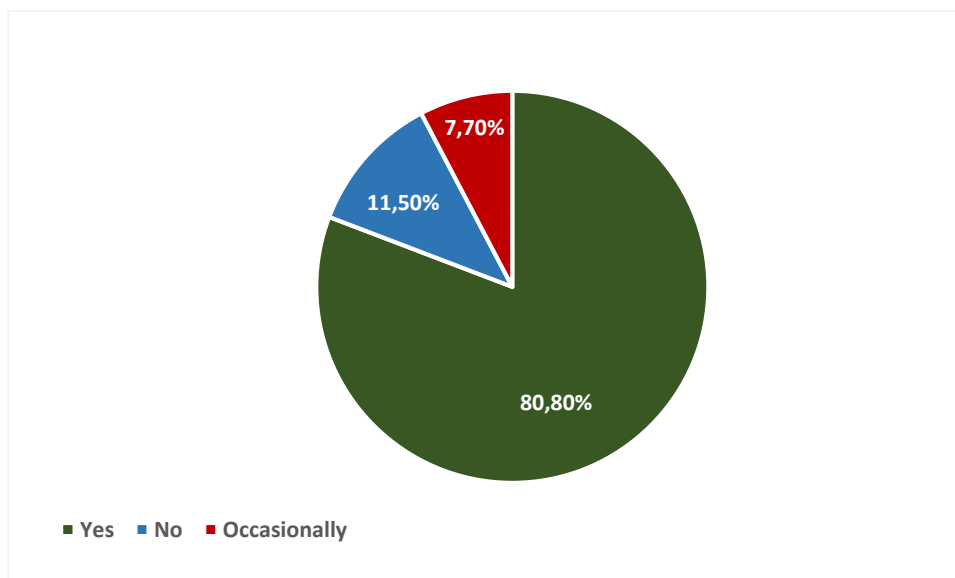
Figure 32. Did the leaders of your university take an active part in the implementation of the project?

To the question "Does your University have a body, council, which is designed to control the quality of projects in which the university participates?" 50% of the respondents answered in the affirmative. But if we consider this issue by the name of Universities, such councils are available only in 6 universities out of 15 surveyed: KNAU, KEU, KGUSTA, OshTU, KSTU and at AIU. Among other universities, councils for monitoring the quality of project implementation have not yet been created.

Interestingly, among them there are big state Universities in the country, such as KNU, ZhSU, International Higher School of Medicine and others.

Concerning KSU and Osh State University received conflicting answers - some participants noted that there is a council, others that there is no such council.

The fact that the implementation of Erasmus + projects was controlled by the administration or other similar bodies was noted by 61.5% of the respondents (the sum of the answers "Yes" and "Other"), see Figure 33. Other third of the participants in this survey (34.6%) noted that there was no such control. Among them are such universities as KNU, ISU named after I. K. Tynystanova, Osh State University, International Higher School of Medicine, NSU.
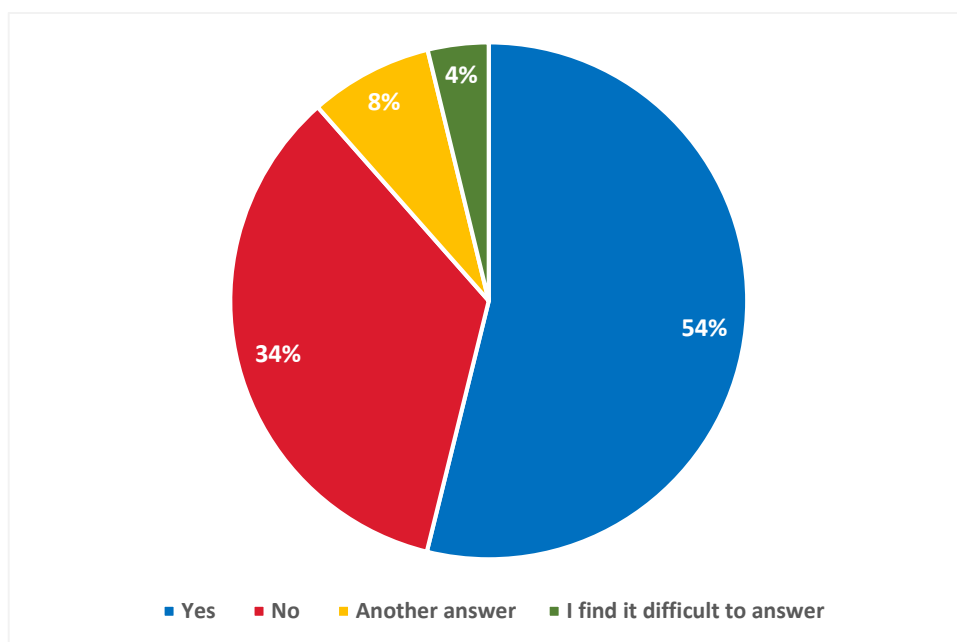
Figure 33. Was the Erasmus + project supervised by a quality board or other similar body?

The "Other" included two responses: "Independent expert and internal project quality council" and "Project coordinators sometimes reported to management and directly to the National Office".

It is important to note that there is a statistically significant relationship between the presence of bodies at a university designed to control the quality of projects and the practical implementation of such control, see Table 7. This result indicates that such councils play a positive role in capacity building of the Universities and they are necessary in the Universities where they have not been created yet.

Table 7. The relationship between the existence of a project control body and practical control

		Was the Erasmus+ project supervised by a quality board or other similar body?				
		Yes	No	Other response	Difficult to answer	Total
Does your University have a body, Council, which is designed to control the quality of projects in which the University participates?	Yes	11	1	0	1	13
	No	3	8	2	0	13
	Total	14	9	2	1	26

Satisfaction of the Universities with participation in CBHE projects.

Almost all participating HEIs (86.7%) are completely satisfied with the results of their participation in CBHE projects, see Figure 34. Only two HEIs (NSU and Ataturk Ala-Too International University) chose the answer "Rather satisfied". Each of these two Universities took part in one project: "EUCA-Invest 2015" and "KyrMedu 2015". All other Universities that participated in these two projects are completely satisfied with the results of their participation.
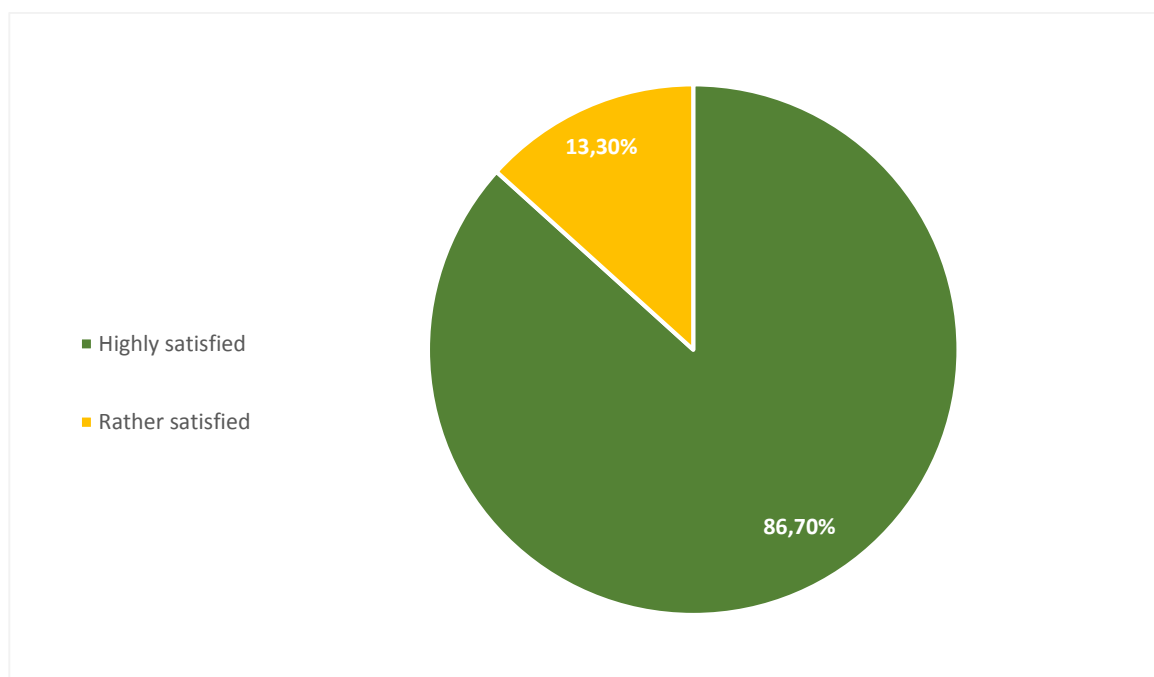
Figure 34. To what extent are the university management satisfied with the results of the university's participation in the project? Answers in percentage.

Impact of Erasmus + projects on the development of Universities.

CBHE projects have had a complex impact on the strategic goals of the development of Universities, see Figure 35. First of all, this is an improvement in the material and technical base of Universities, which was noted by employees of all Universities except KNU. J. Balasagyn. As you know, compliance with the modern requirements of the material and technical base of the University affects the quality of education, is one of the factors in the licensing of the university. This includes, among others, laboratories, an electronic library, Internet classes, technical aids for teaching foreign languages, and much more. Thanks to participation in the CBHE project, video conference classes (KyrMedu), a biomedical laboratory (based on KSMA), creative laboratories (EUCA-Invest), online platforms and electronic versions of modules, and much more were created. The transition of Universities of the Kyrgyz Republic to online education due to Covid-19 has actualized the importance of the material and technical readiness of Universities to provide distance learning. Perhaps that is why the absolute majority of Universities participating in the Erasmus + projects during the current assessment necessarily indicated an improvement in the material and technical base.

On the second place in terms of the frequency of responses is the expansion and establishment of cooperation with other Universities. First of all, we are talking about cooperation

with partner Universities from other countries. This was noted by 19 respondents (73.1%) from 12 universities. Involvement in projects of a large number of foreign Universities in Europe and post-Soviet countries and travels distinguish the CBHE projects from other projects. It is important to note that in each project the share of foreign Universities was 1.5-2 times higher than the share of Kyrgyz Universities. The establishment of cooperation was facilitated by internships of teachers, visits from foreign universities, trainings from professors of foreign universities, joint preparation of educational materials. 96.2% of survey participants noted that they acquired knowledge / innovation from their partners from other countries.
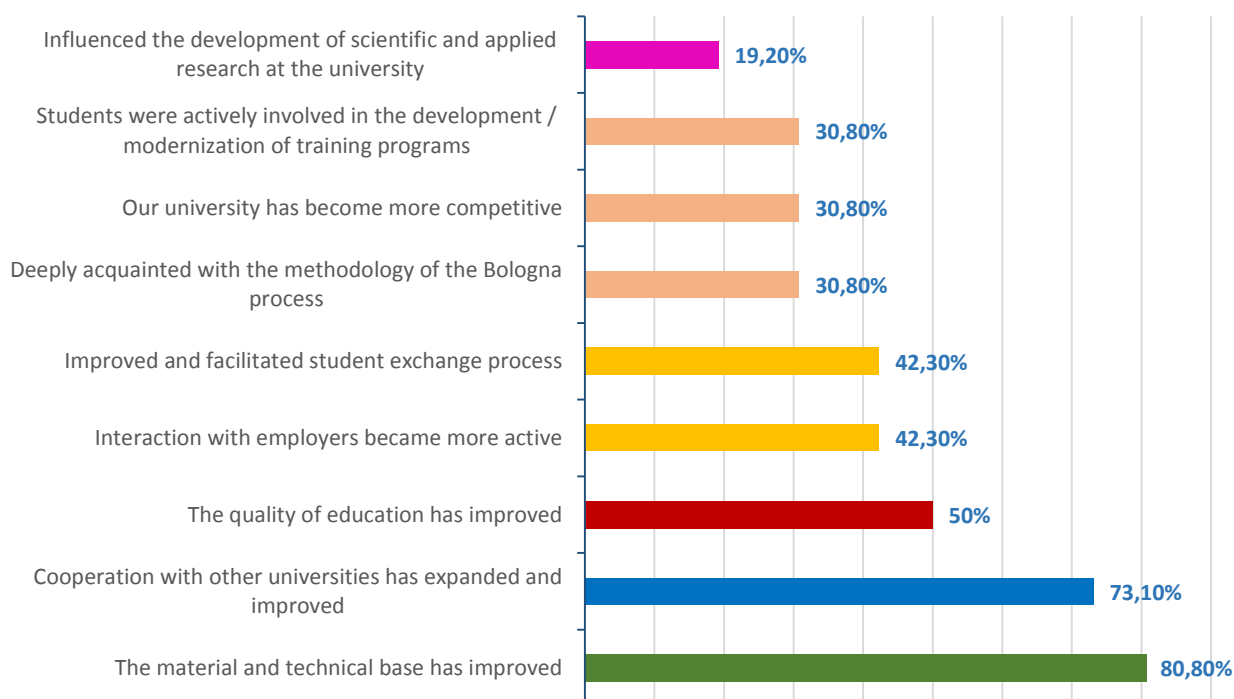
Figure 35. What are the strategic goals of your university / faculty that the project results contribute to?

On the third place in terms of the frequency of responses is the improvement in the quality of education in Universities (13 respondents from 11 universities). This is a multidimensional category, including the degree of academic qualifications of teachers, modern curricula, the involvement of teachers in scientific research, the material and technical base of Universities, etc.

The following answers also deserve attention: interaction with employers has become more active; the process of student exchange with other universities has improved.

Based on the results of CBHE projects, 13 out of 15 Universities (86.7%) introduced changes to the strategic development documents of the University / faculty. Changes were not introduced only in KSTU named after. I. Razzakov and at NSU.

Reforming the curricula.

Modern curricula had been developed and/or modernized in all HEIs without exception. Annex 4 to the report presents the titles of curricula by levels of professional higher education, languages and persons who were involved in their development. All new curricula are relevant for the Kyrgyz Republic, interdisciplinary and take into account the use of computer and Internet technologies.

For example, these are such curricula as "Sustainable Tourism Development", "Biomedical Engineering", "Informatics in Health Care", "Resource Efficient Production Logistics in the Agro-

Industrial Complex", "Sustainable Tourism", "Geo-Information Systems and Technologies and Remote Sensing for Disaster Risk Management", "Environmental protection and rational use of land resources "and others.

In 12 universities out of 15 (80%), new curricula are designed for the undergraduate level. For the Master's degree, new curricula have been developed in 9 universities (60%). In two universities, curricula have been developed for PhD (KSTU named after Razzakov and IHSM). The course for advanced training of civil servants was developed by one University (KSU named after I. Arabaev).

In 13 Universities (86.7%), new curricula are compulsory courses. At 8 universities, new curricula are included in elective courses.

In 8 universities (53.3%) new curricula were developed in English (State Institution "Adam", KSTU named after Razzakov, KSU named after I. Arabaev, KNAU named after Skryabin, KNU named after Balasagyn, IHSM, IU Ala-Too , Osh State University). In the Kyrgyz language in 2 universities (13.3%): Osh State University and KSU named after I. Arabaev. In Russian in 10 Universities (66.7%).

These courses were developed primarily by working groups. However, other stakeholders were also involved in the development of the curricula, see Figure 36.
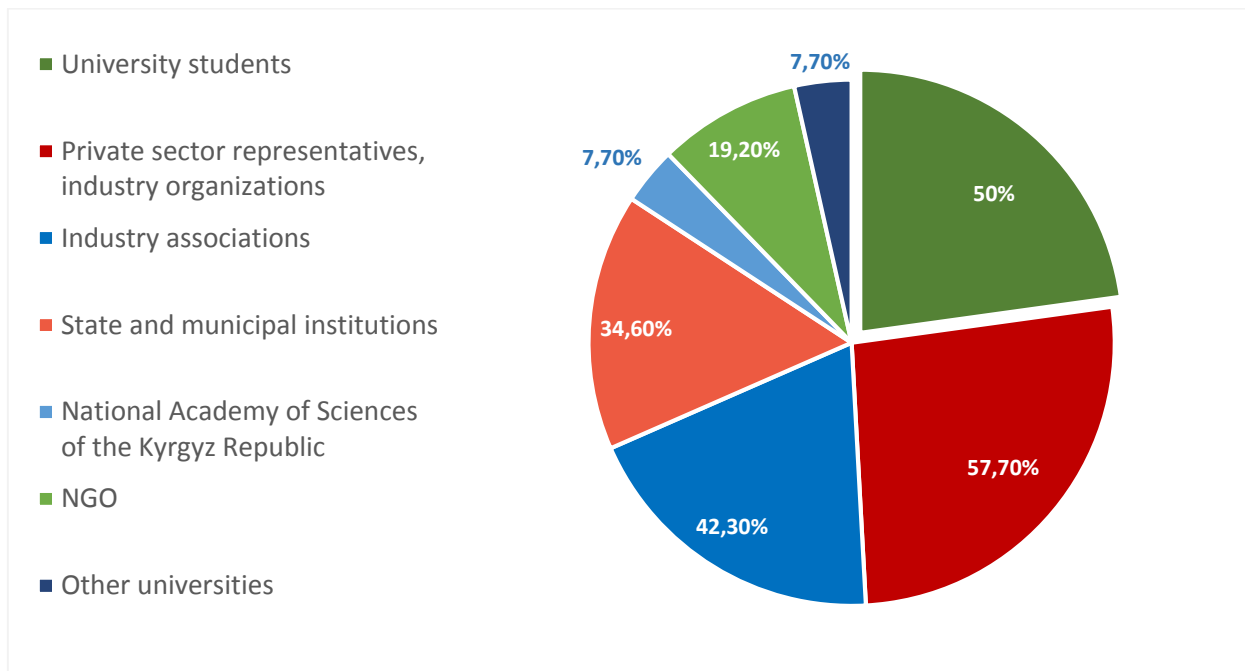
Figure 36. What persons were involved in their development / modernization?". Multiple answers, percentage.

We see that a wide range of people have been involved in the development of new curricula. The most involved were representatives of the private sector (57.7%) and industry associations (42.3%), state and municipal institutions (34.6%), which makes these programs as close as possible to the practices and specific features of the socio-economic environment of the Kyrgyz Republic. Every second respondent noted the involvement of students in the development of new curricula. Discussion of the content and modular tasks validates the curriculum, sets an adequate level of complexity, clarifies ambiguous points in the texts

According to the answers of 96.2% of the respondents, the developed or modified curricula correspond to the European system of transfer and accumulation of points, see Figure 37.
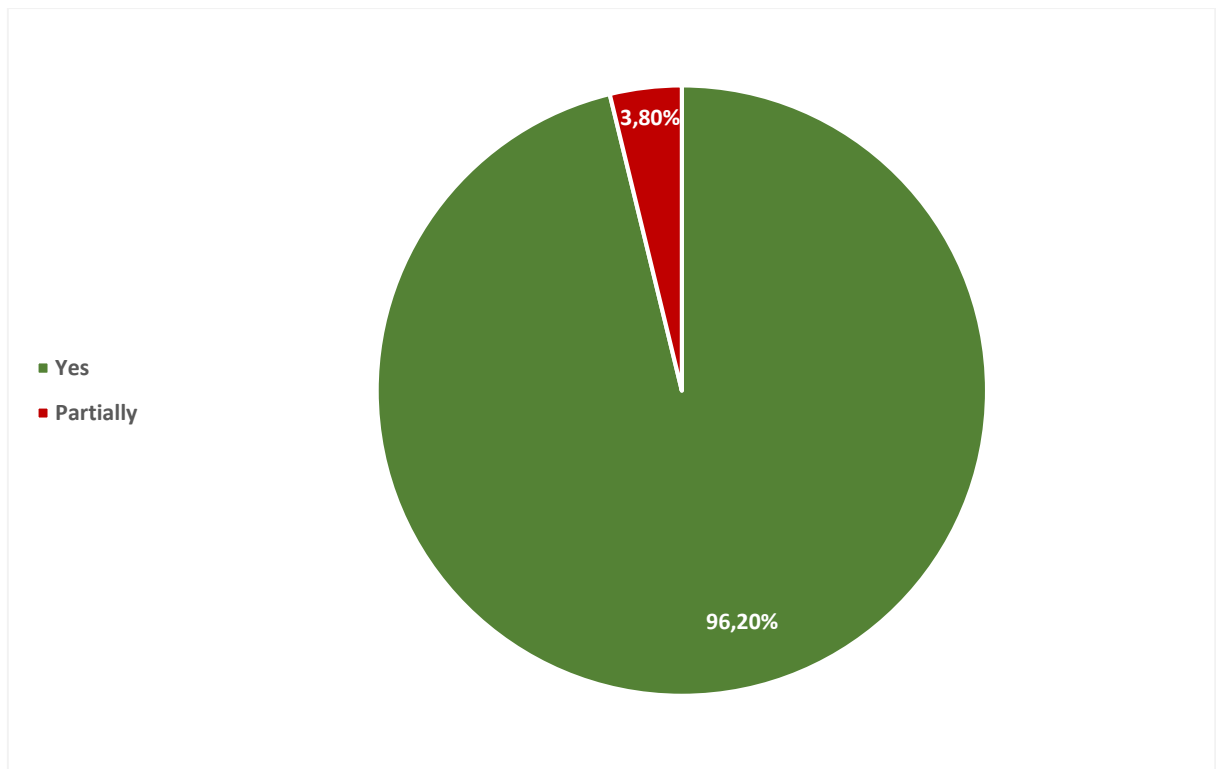
Figure 37. Are the curricula in line with the European Credit Transfer System (ECTS)?

Within the framework CBHE projects, in addition to curricula in universities, other intellectual products were developed, see Figure 38. Most often, these are trainings that were developed in 22 universities.
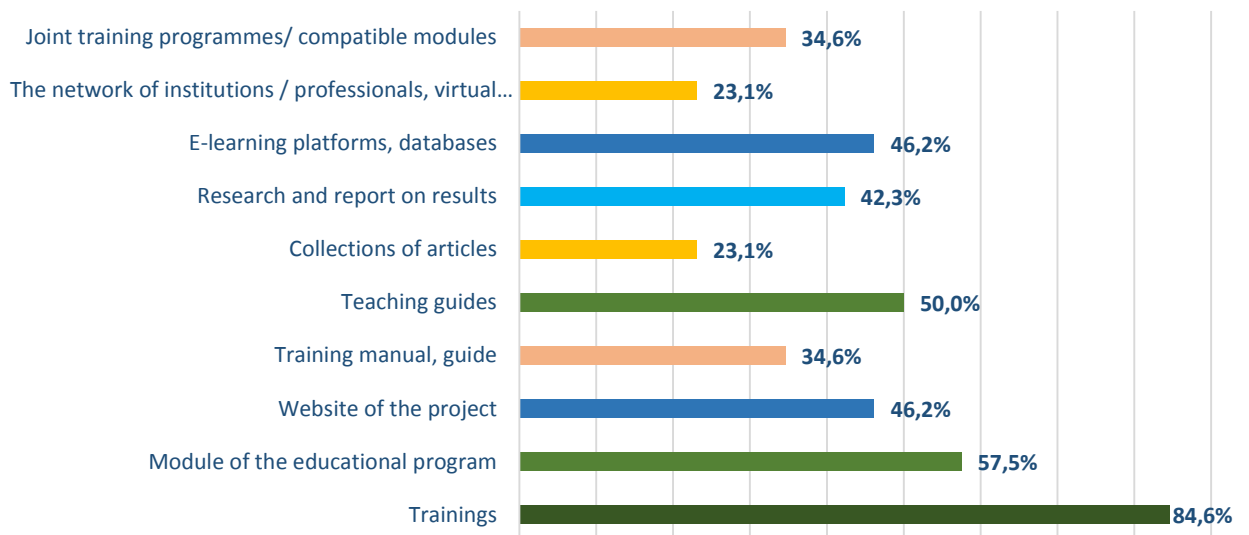
Figure 38. What other intellectual products were developed within the project? In percentage.

Building sustainability.

Implementation of the curricula. The curricula developed within the CBHE projects are one of its key results. Although the projects themselves have been completed, most of the new curricula (73.1%) in the 2020-2021 academic year have been introduced into the academic process and are being taught, see Figure 39.
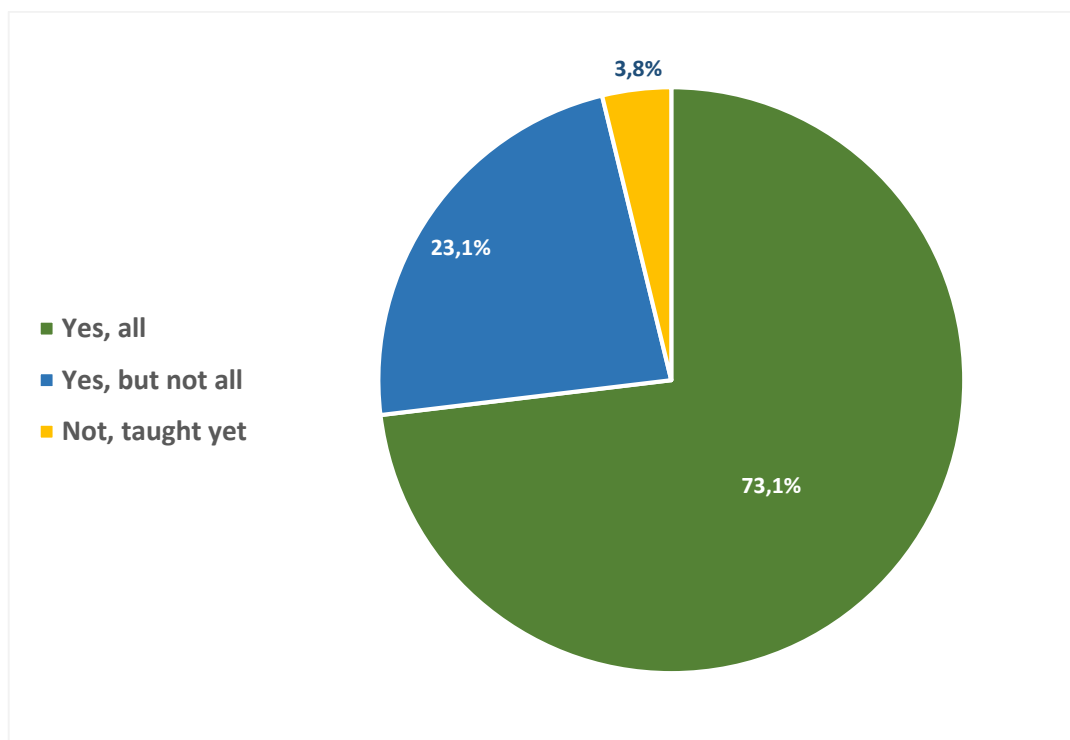
Figure 39. Are these curricula being taught to students this academic year?

About a quarter of the respondents noted that not all courses are taught. These reasons why programs are not taught in the current academic year are rather objective[1]:

• "The license for the PhD program has expired, we are waiting for an extension. For the Master;s Degree programme - the first admission of documents for the 1st year is underway "(International Higher School of Medicine)
• "Refresher courses for civil servants are temporarily not held due to political events and COVID - 19" (KSU named after I. Arabaev)
• "Were foreseen in senior courses, curricula have already been created" (ZhSU)
• "In connection with the first year of study" (KNAU named after Skryabin)
• "There were problems of consistency with syllabus and finding the right teaching staff" (IU Ala-Too).

Most of the rest of the intellectual products are also used in the current academic year, see Figure 40. E-learning platforms are used by universities with the greatest success, due to the transition to online education in connection with Covid-19. They also use training materials, teaching aids and modules of educational programs.

---

[1] Respondents' answers are given without editing

The results of various studies carried out in the framework of CBHE projects turned out less sustainable. They are used less frequently than all other results.
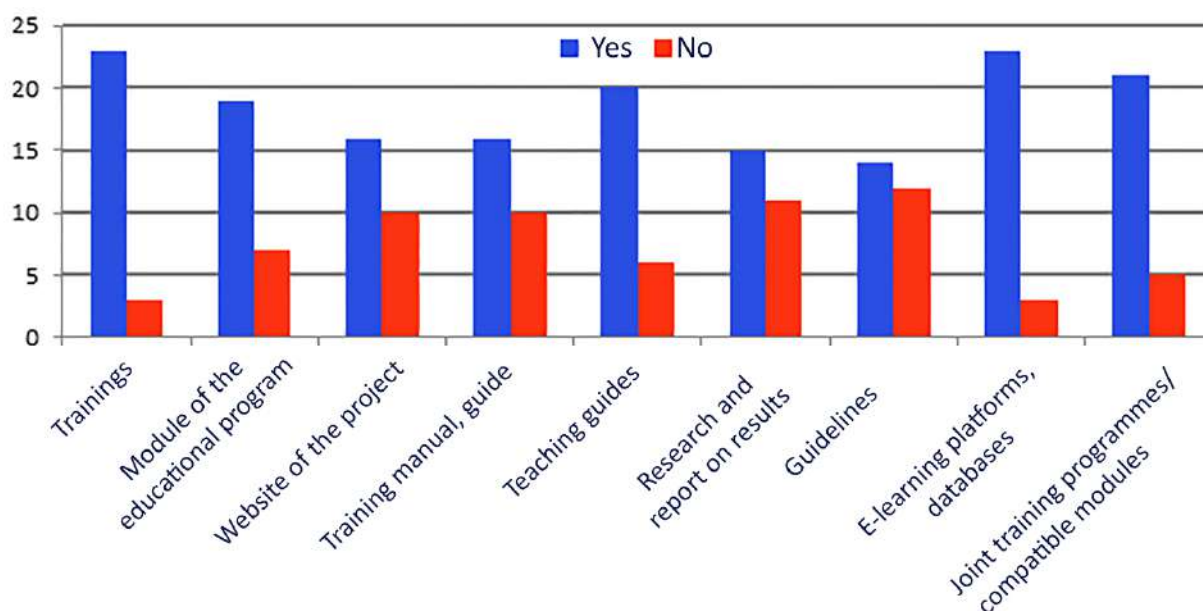
Figure 40. Which of the listed intellectual products does your university continue to use at present?

For Universities, KSU named after I. Arabaev, KNAU Skryabin, IHSM, NSU, IU Ala-Too, OshTU have preserved and still use the CBHE projects' results as much as possible. The administrations of these higher education institutions noted that they use all the obtained and accumulated project results. Least of all intelligent products are used in ZhSU and KSUCTA. A detailed table on the use of intellectual products produced during the implementation of Erasmus + projects is presented in Appendix 5.

Informing about the project results. In order to widely inform about the project, 14 Universities out of 15 (93.3%) held round tables, where they presented the CBHE projects. This was noted by 92.3% of all surveyed respondents, please see Figure 41. Second most popular are publications about the project on the Internet.
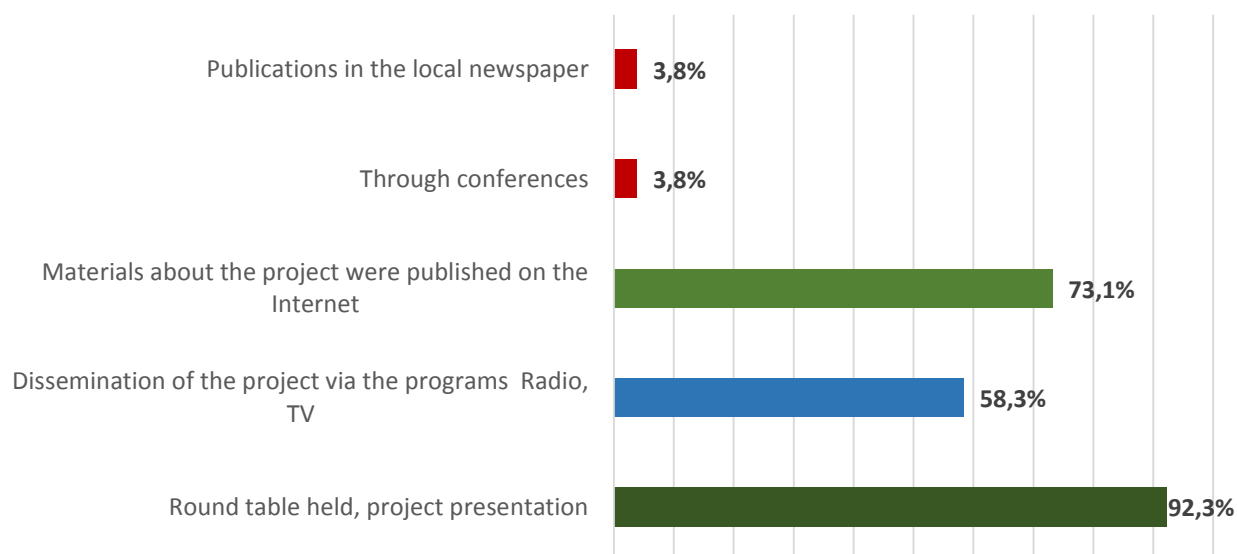
Figure 41. What measures have been taken by the university / faculty to raise awareness about the project? In percentage.

Maintaining cooperation. Almost all Universities noted that they are continuing to cooperate with project partners at the present time. Figure 42 shows the types of collaboration. Most often, Universities have maintained cooperation with local and foreign Universities (88% and 80.8%, respectively). Less frequently, cooperation has remained with industry and professional associations.
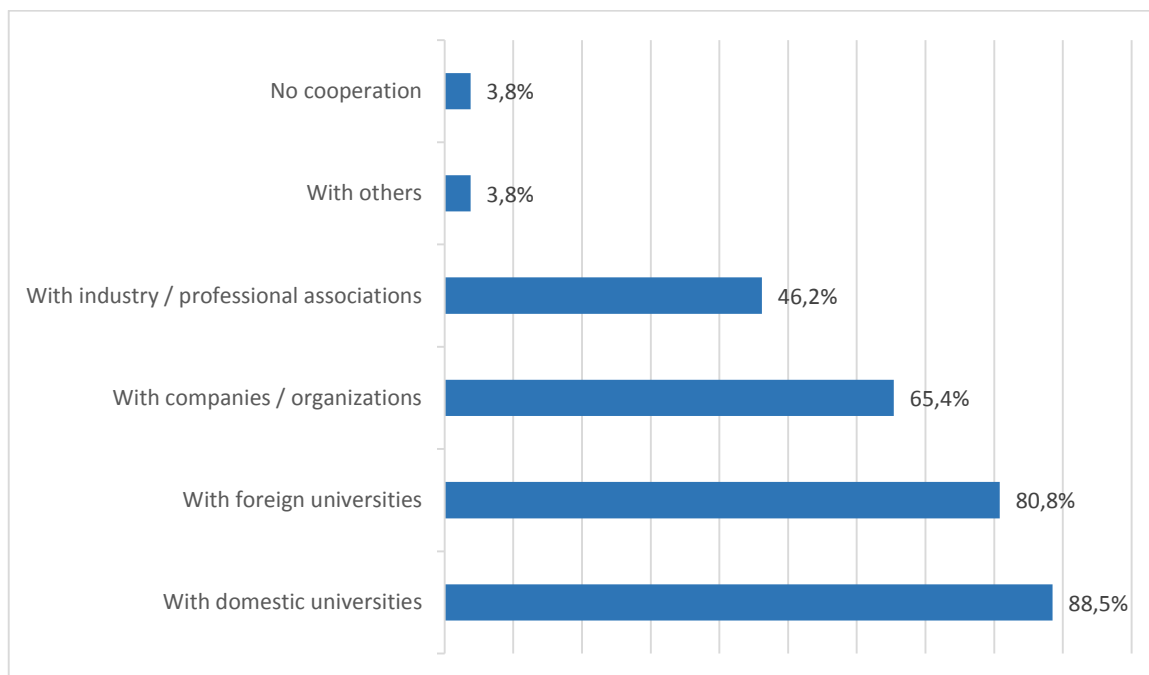
Figure 42. With whom of the project partners does your university / faculty continue to cooperate at the present time? In percentage.

Universities cooperate with partners in CBHE projects more often on academic mobility of teachers and students, see the data in Figure 43.
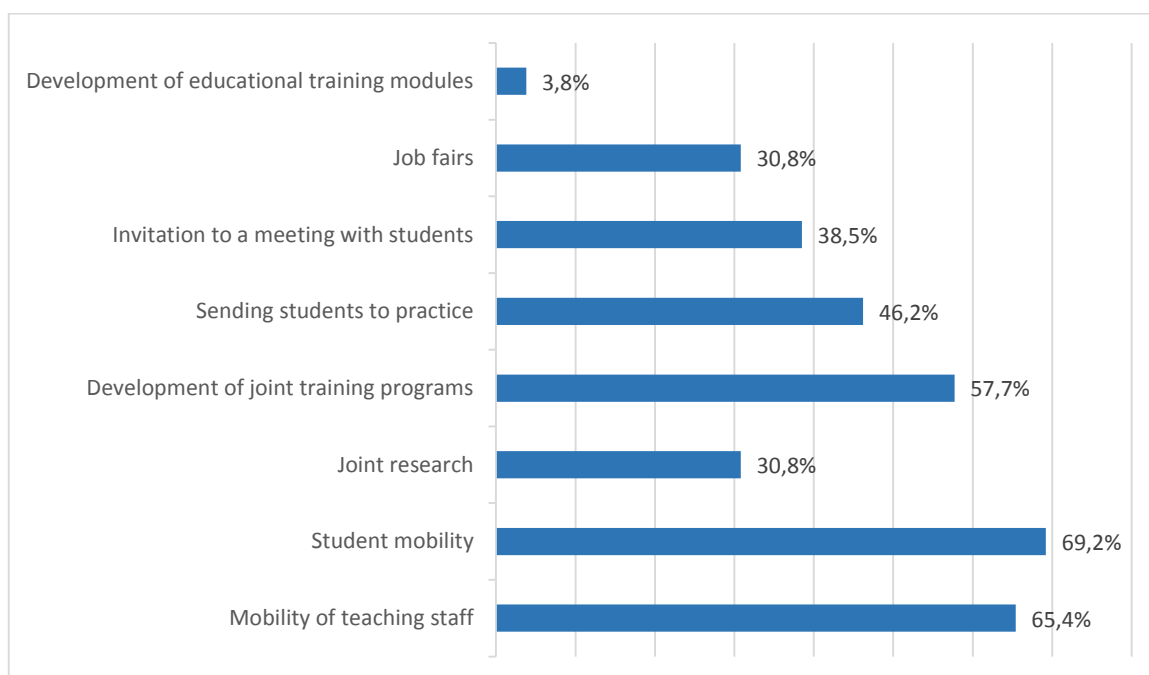
Figure 43. If your university / faculty continues to cooperate with the project partners at the present time, please indicate the types of cooperation?

Internationalization of Universities. The development of international relations and the internationalization of the University to a large extent depend on the activities of the departments of international cooperation. On the whole, the CBHE projects have positively influenced the strengthening of the qualification potential of the university departments for international relations, see the data in Figure 44. 57.7% of the respondents noted a clear improvement. These are such universities as the "Adam" University, KSTU named after. Razzakov, KSU named after I. Arabaeva, IU Ataturk Ala-Too and OshTU.

Universities that believe that the CBHE projects rather did not affect: KNU named after Balasagyn, Osh State University and NSU.
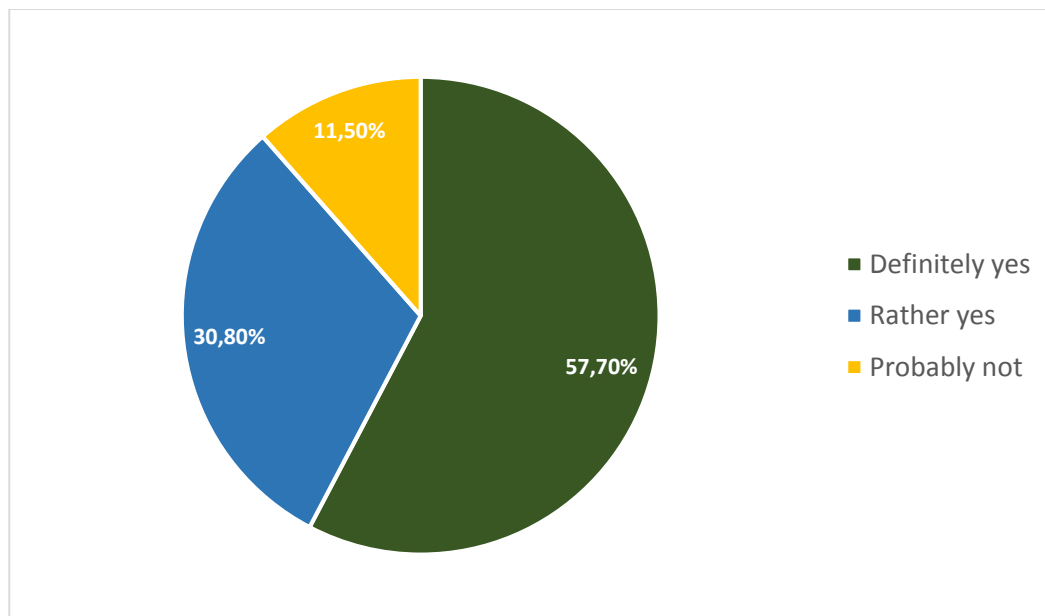
Figure 44. During your participation in Erasmus + projects, the international relations department of your university strengthened, increased experience, improved the foreign language or not?

In 13 Universities out of 15 surveyed, documents were adopted aimed at supporting internationalization, deepening into the international academic space, to international standards. Among the respondents, this was noted by 88.5% of the survey participants, see Figure 45.
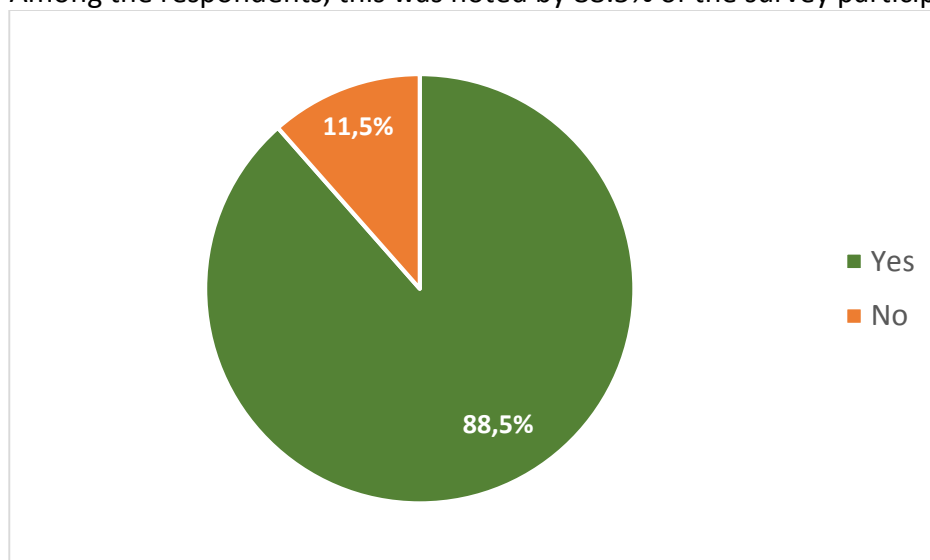
Figure 45. Were documents created and adopted at the university aimed at supporting internationalization, deepening into the international academic space, to international standards? In percentage.

11 out of 15 Universities noted that the experience gained during the implementation of the projects is used in other faculties and departments, see the data in Figure 46. These are Universities such as: KNU named after J. Balasagyn, KSTU named after Razzakov, KNAU named after Skriabin, ISU named after I. Tynystanov, KEU named after Ryskulbekov, OshTU, KSU named after I. Arabaev, IHSM, NSU, TSU, IU Ala-Too.
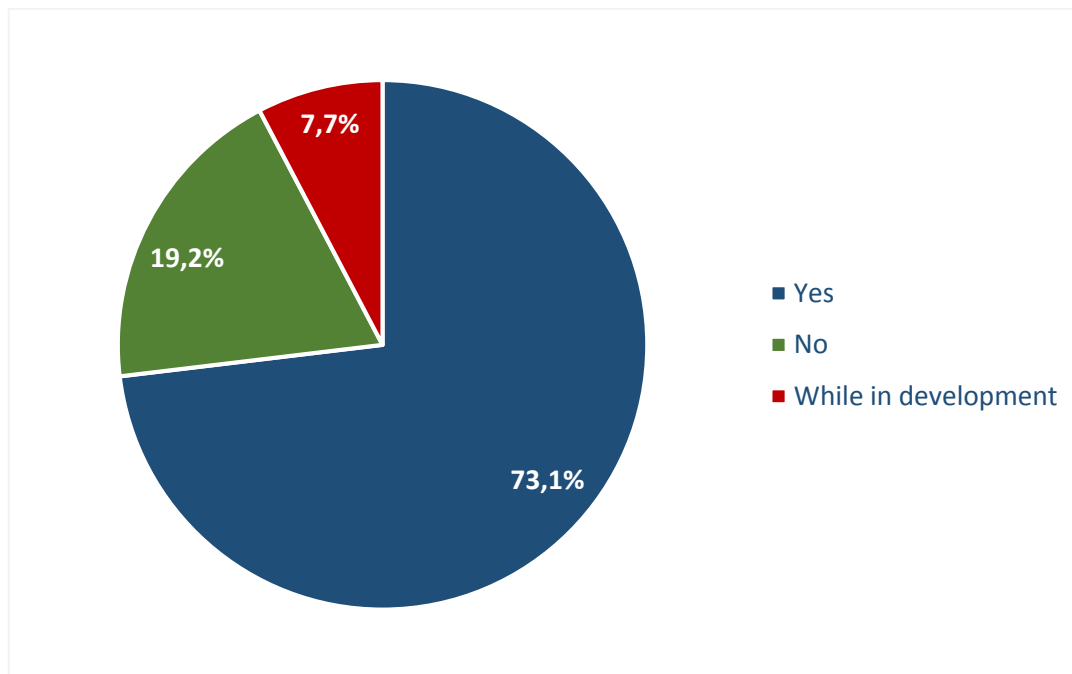
Figure 46. Does your University have experience in transferring the results of the Erasmus + project to other faculties / departments / structural divisions?

Additional funding for the use and further development of the project results was received by 5 Universities out of 15 (33.3%): KSTU named after Razzakov, IHSM, NSU, TSU, IU Ala-Too. Another university noted that it received partial funding. We are talking about the ISU named after K. Tynystanov, that was able to receive a grant from Hanns-Seidel-Stiftung for the trainings. The rest of the Universities did not receive additional funding for the use and further development of the project results.
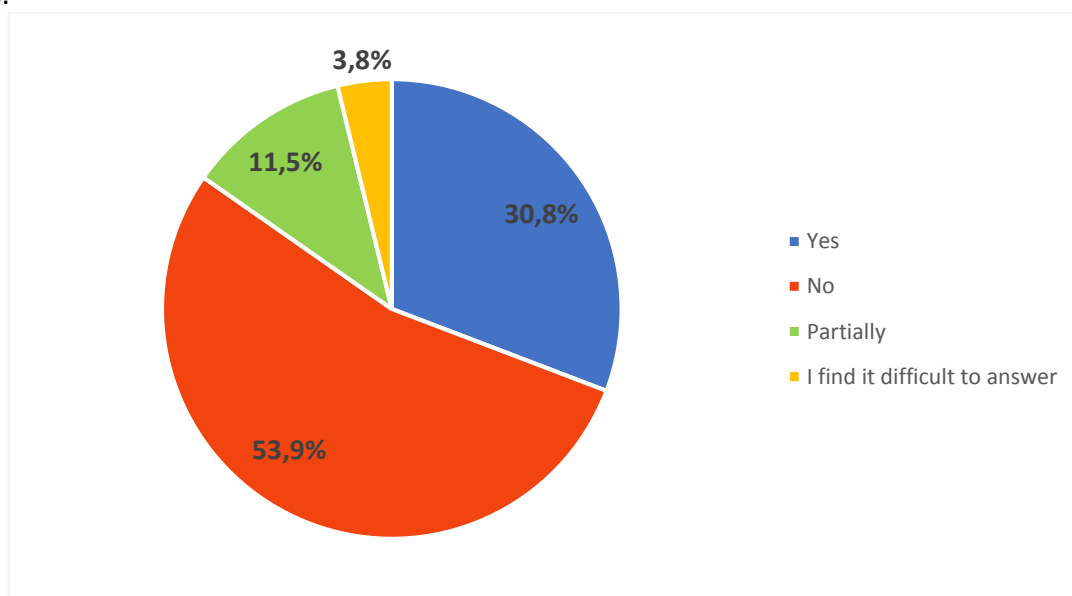
Figure 47. Has your University received additional funding for use and further develop the project results?

Among other measures that were developed as a result of the project, the NSU administration introduced an online reporting system within the University. A databank of potential and interested parties / specialists, prepared documents for obtaining a license was created at KSU named after I. Arabaev.

Technical renewal of Universities. It was noted above that the CBHE projects have improved the material and technical base of Universities. Figure 48 shows in more detail the professional and methodological structures that were discovered during participation in the Erasmus + projects. 8 laboratories were opened, such as, for example, the Laboratory of Geo-Information Systems, e-Learning-laboratory, computer laboratory, online learning laboratory and others. The same number of innovation centers and startups were opened, such as an incubator for students for their innovative projects.
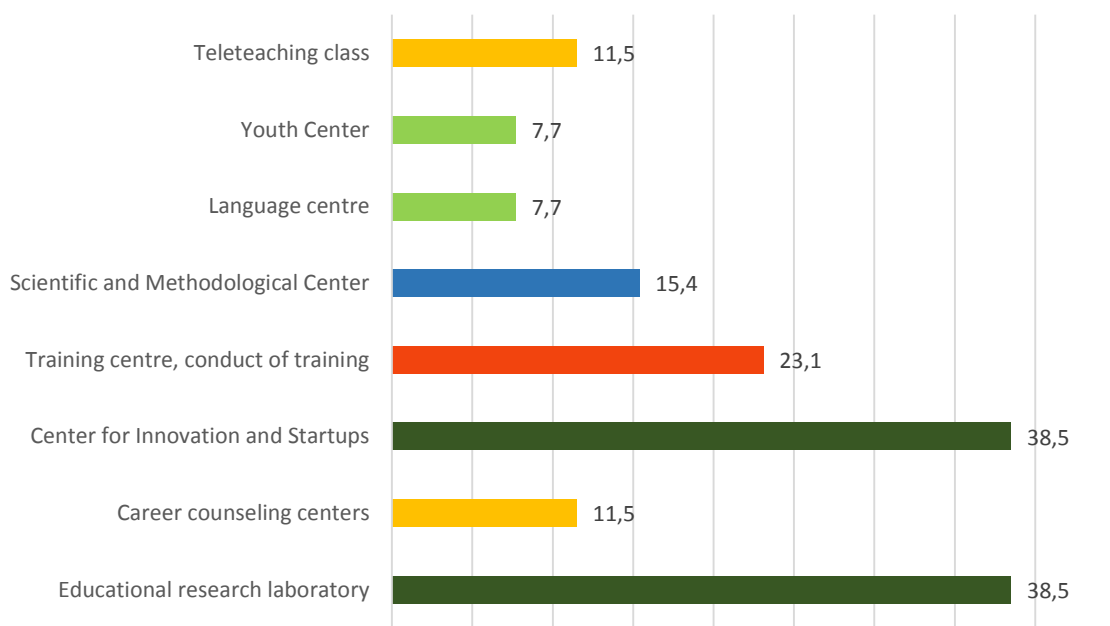
Figure 48. What facilities were opened as a result of the University's participation in Erasmus + projects? In percentage

Office equipment was purchased in 14 out of 15 Universities (93.3%). In 11 Universities (73.3%), the project purchased specialized laboratory equipment.
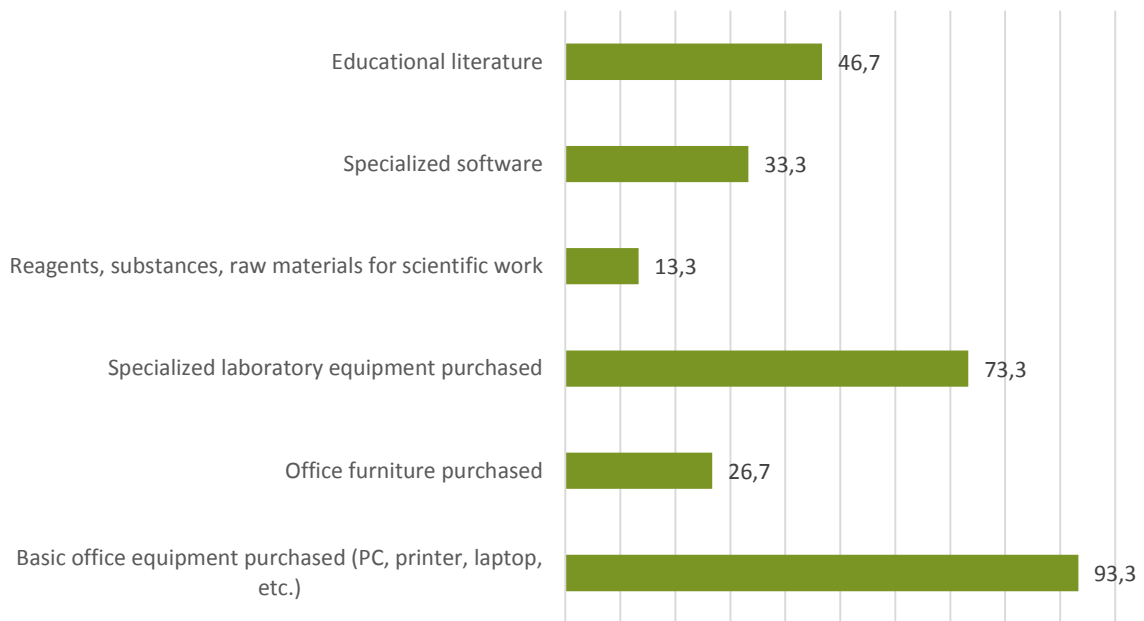
Figure 49. What technical equipment of these facilities was carried out through the Erasmus + projects? In percentage

Each technical equipment has its own functions and they are all important for Kyrgyz Universities. At the same time, specialized programs and laboratory equipment are of the greatest value, both in material and educational terms. They are more expensive and they ultimately determine the completeness of conceptual knowledge. Due to the lack of the necessary competencies, expensive equipment and software applications can be idle. Among all surveyed universities, 6 (40%) noted that they have specialists with knowledge and skills to work at a high professional level, see Figure 50.

These are "Adam" University, ZhSU, KSUCTA, KNAU named after Skriabin, KNU named after J. Balasagyn and OshTU. But "Adam" University and ZhSU indicated that they purchased only office equipment. The other four Universities purchased specialized equipment.

The basic level of knowledge was indicated by ISU named after Tynystanov and KEU named after M. Ryskulbekov (13.3%). Both universities purchased specialized equipment.

Among the remaining 7 Universities (46.7%), the assessments were divided between the basic and professional levels (NSU, TSU, IU Ala-Too, Osh State University, IHSM, I Razzakov KSTU, I. Arabaev KSU).
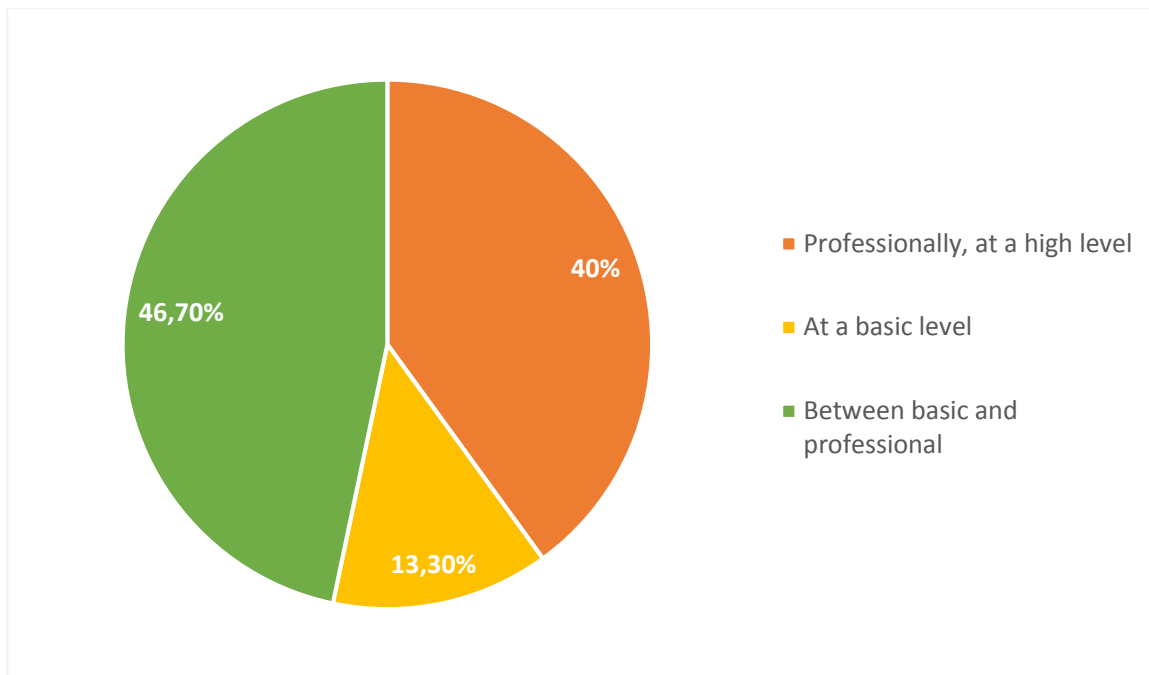
Figure 50. To what extent does the staff have all the skills to use specialized equipment and programs? In percentage.

According to the answers obtained in 12 Universities out of 15 (80%), all purchased objects, equipment, software applications are fully supported and continue to work, see Figure 51. In 3 Universities (20%), equipment and software applications are not fully functional. These are such universities as I Razzakov KSTU, Osh State University and IHSM.
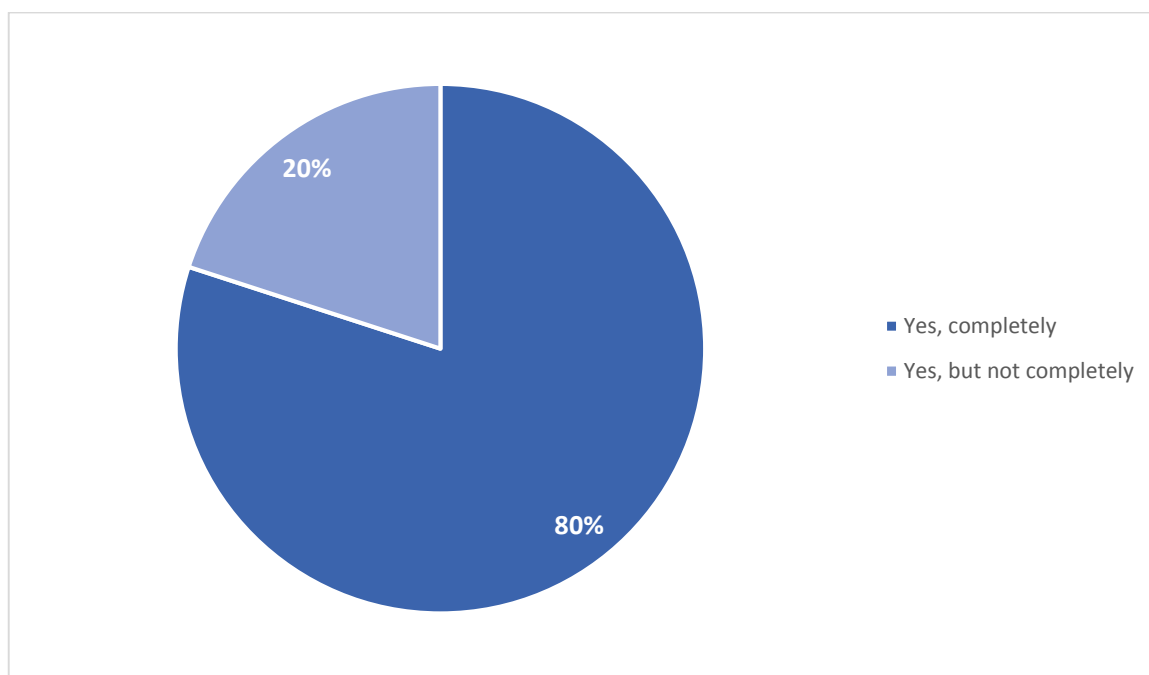
Figure 51. Do these facilities continue to function as expected? (for example: maintenance, supply of raw materials, renewal of software licenses, etc.)

All surveyed Universities support the facilities created within the framework of the project and the equipment purchased for them at their own expense, see Figure 52. At the same time, in 3 Universities - KSTU, KNAU and Osh State University noted that they also attract funds from other grants and projects for support. For support, IHSM, among others, attracts funds received through the provision of paid services/ commercialization of objects opened through the Erasmus + projects.
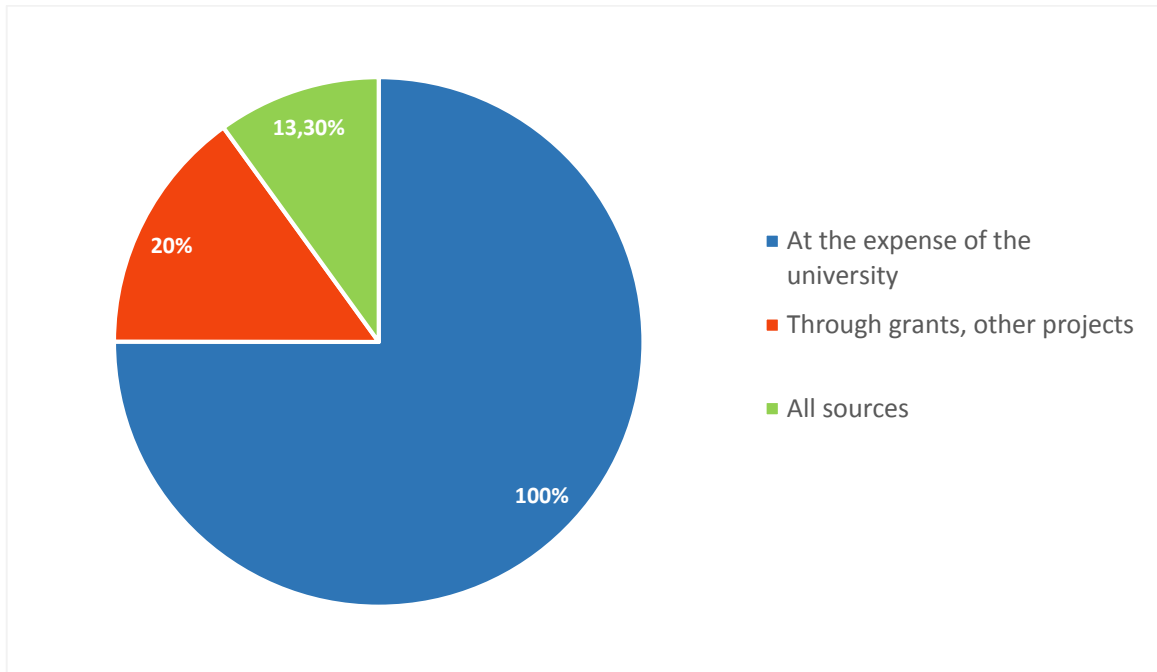
Figure 52. What funds are used to support these objects?

System-level impact assessment

This part of the study contains the results of a survey of 5 experts who are aware of CBHE projects, were directly involved in them. The first expert represents the Ministry of Education and Science of the Kyrgyz Republic, and holds the position of the head of the Vocational Education Department of the Ministry. The Ministry of Education and Science of the Kyrgyz Republic participated in 9 projects on Capacity building in higher education: EurDIQ 2015, IUCLAND 2015, MIND 2015, CACTLE 2015, LMPT 2016, TUTORIAL 2016, PAWER 2016, EPCA 2017, CANERIEH 2012.

The second expert is the rector of one of the universities of the Kyrgyz Republic (participated in KyrMedu 2015, HECAFS 2016). The third expert is the director of the Department of Education and Quality Management of one of the universities. The fourth (KyrMedu 2015, TUTORIAL 2016, CANERIEH 2012) and the fifth (TUTORIAL 2016) experts are professors and scientists.

Within the framework of these projects, MES employees carried out mobility to the EU countries or to other countries in order to exchange experience, participate in trainings, and meet on the project.

Impact of the CBHE projects on the higher education system

According to experts, the Erasmus + projects contributed most of all to improving the quality of curricula, see Figure 53. Also, to the greatest extent, CBHE projects influenced the creation and development of a national qualifications framework in the Kyrgyz Republic based on the European qualifications' framework for higher education. As you know, comparability and recognition of qualifications and diplomas of education are the basis for the development of academic and labor mobility of citizens of the country.

The least impact, in the opinion of experts, was the development of inclusion of the results of scientific research in the curriculum. This assessment is in line with that of Universities, which also believe that the inclusion of research findings in curricula remains low.
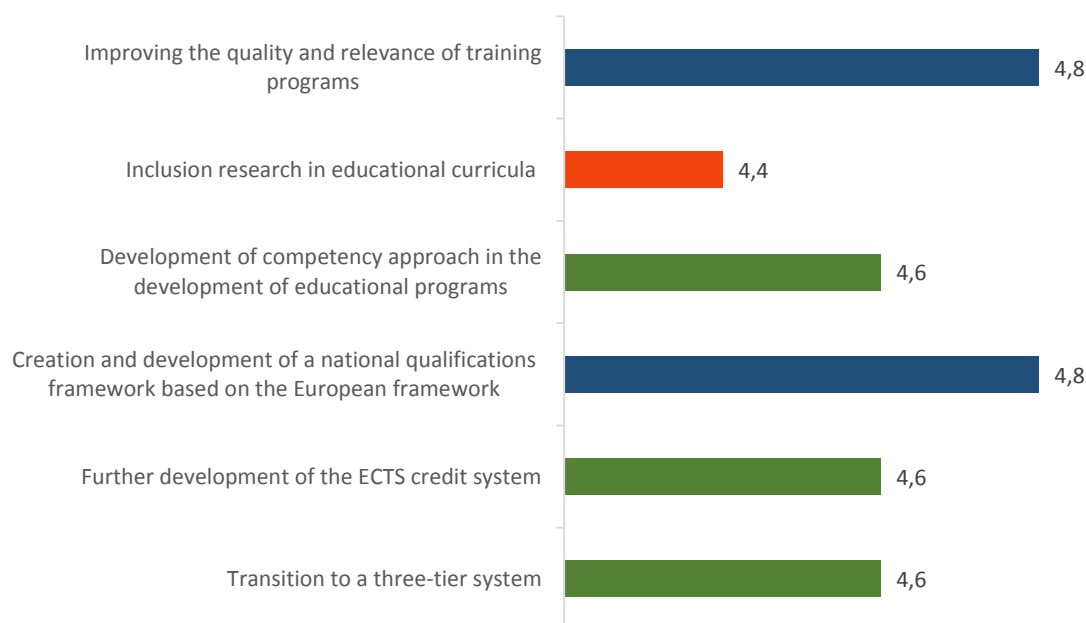
Figure 53. To what extent have Erasmus + projects contributed to the change in the curriculum of higher education in terms of the following indicators? (mark on a 5-point scale, where 1 point is the least; 5 points is the most). Average.

All respondents unanimously noted that the Erasmus + projects contributed to the improvement of knowledge exchange among the Universities of the Kyrgyz Republic.

In the opinion of the majority of experts, the CBHE projects contributed to the promotion of the development and use of digital tools and the increase of the social, civic and intercultural competence of students, see the data in Table 8. It should be noted that in recent years the Ministry of Education and Science of the Kyrgyz Republic has been able to implement several electronic platforms: for example, "Open Library lib.kg ", Complex of electronic resources Ibilim.kg", "Educational complex of electronic resources" Bilim bulagy ", Network of academic libraries kyrlibnet.kg.

Also, experts believe that the projects have contributed to the increase in the level of student achievement. But, from the answers of the experts, it can be noted that despite the participation of practitioners from professional associations in the Erasmus + projects, the issue of a connection between the higher education system and the labor market remains unresolved in the Kyrgyz Republic - the labor market signals are poorly captured by the HE system.

Table 8. In general, do you agree with the fact that the CBHE projects have contributed to the solution of the following problems in the higher education system of the Kyrgyz Republic? Human.

	I completely agree	Rather agree	Rather disagree	Strongly disagree	Total
Promoting the development of innovative pedagogical approaches, teaching methods	3	1	0	1	5
Strengthening the response of the higher education system to challenges such as employment and economic growth	2	2	1	0	5
Promote the development and use of digital tools	4	0	0	1	5
Increasing the social, civic and intercultural competence of students	4	0	1	0	5
Integrations between HE, Research and Business (Knowledge Triangle)	2	3	0	0	5
Eliminating skills mismatches in the labor market	2	2	1	0	5
Increasing the level of academic achievement in HE	3	2	0	0	5

Most of the experts (4 out of 5), including the representative of the Ministry of Education and Science of the Kyrgyz Republic, believe that the Erasmus + projects contributed to the development of Educational standards for university teachers in the Kyrgyz Republic, see Figure 54.
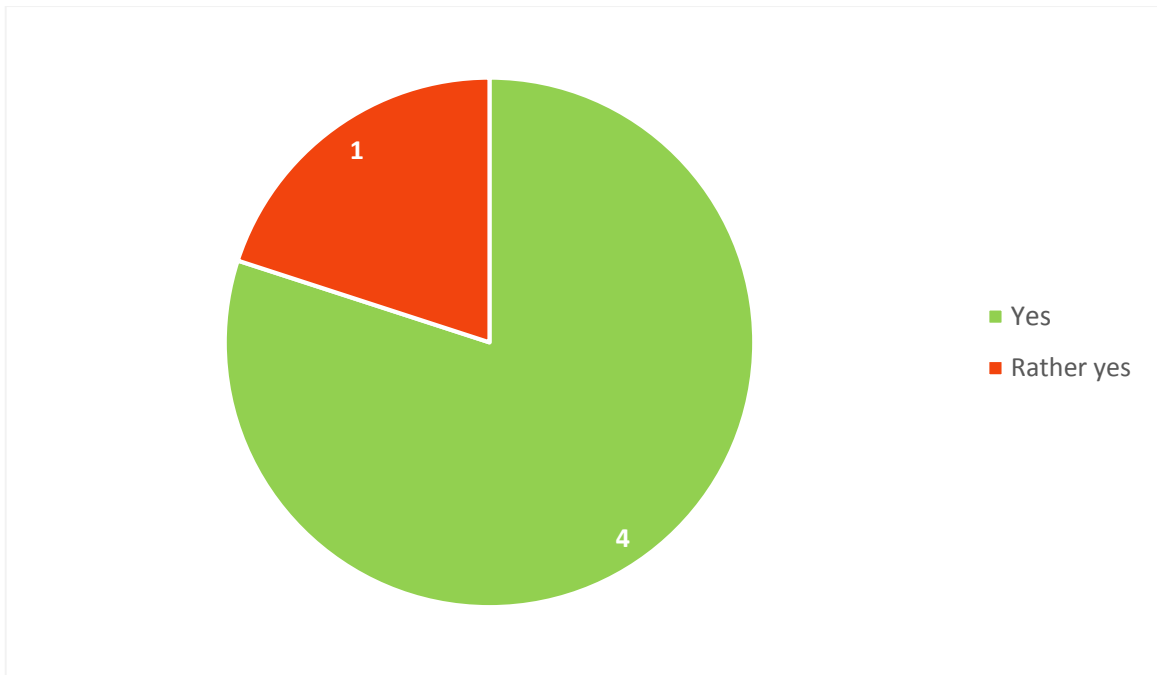
Figure 54. Did the Erasmus + projects in the Kyrgyz Republic contribute to the development of Educational Standards for university teachers?

80% of respondents noted that Erasmus + projects fully comply with the Education Development Strategy in the Kyrgyz Republic and only one expert expressed a slight uncertainty, see Figure 55.
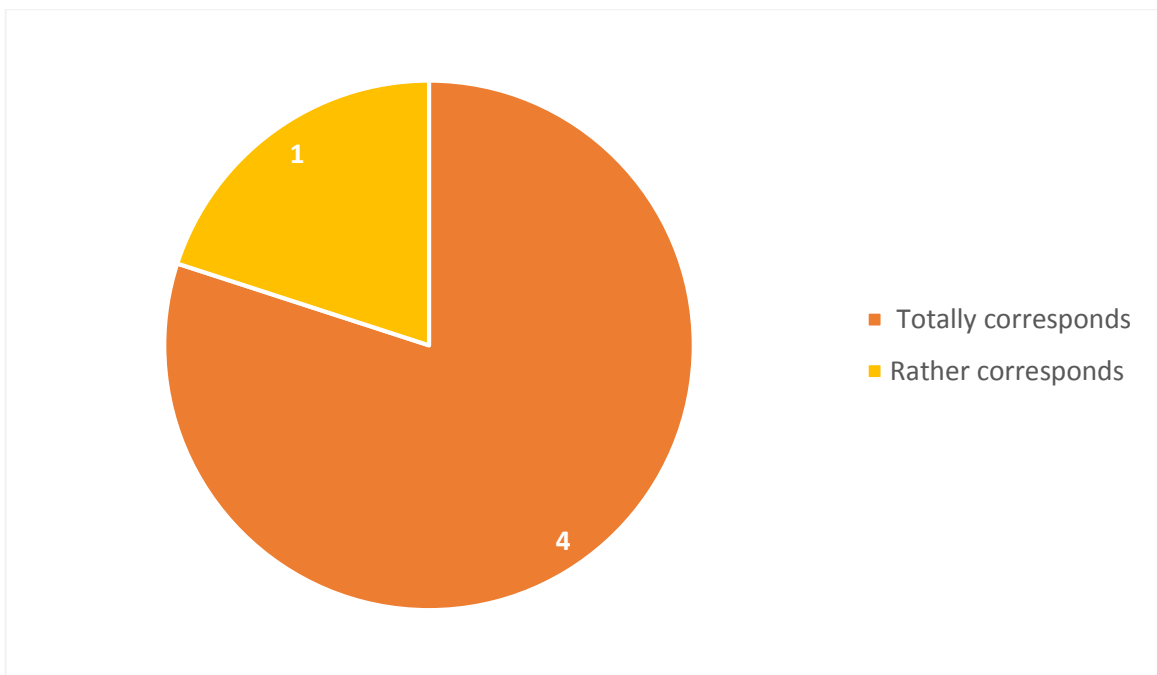
Figure 55. To what extent do Erasmus + projects correspond to the Education Development Strategy in the Kyrgyz Republic?

The representative of the Ministry of Education and Science of the Kyrgyz Republic, as well as 2 experts noted that definitely the experience and results of the participation of the Ministry of Education and Science of the Kyrgyz Republic in Erasmus + projects were taken into account in the

development of the "Education Development Strategy in the Kyrgyz Republic for 2021-2040". 2 experts expressed little doubt, see Figure 56.
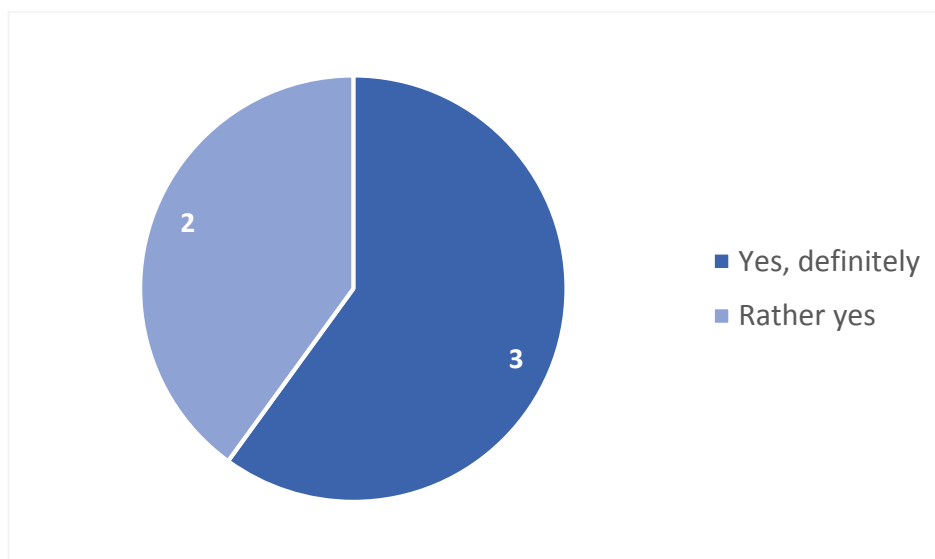
Figure 56. Were the experience and results of the participation of the Ministry of Education and Science of the Kyrgyz Republic in Erasmus + projects taken into account in the development of the "Education Development Strategy in the Kyrgyz Republic for 2021-2040

As the representative of the Ministry of Education noted, the experience and results of the Ministry of Education and Science of the Kyrgyz Republic in the Erasmus + projects were taken into account in such areas of the "Education Strategy in the Kyrgyz Republic for 2021-2040" as the introduction of modern digital technologies, the internationalization of education, inclusion. The Rector of the University noted the introduction of a three-level education system, as well as the development of a credit education system.

The impact of Erasmus + projects on the integration of information and communication technologies into the curriculum of higher education was indicated by all 5 respondents, with the difference that 4 of them answered with confidence "definitely influenced" and 1 respondent expressed the assumption "rather influenced", see Figure 57.
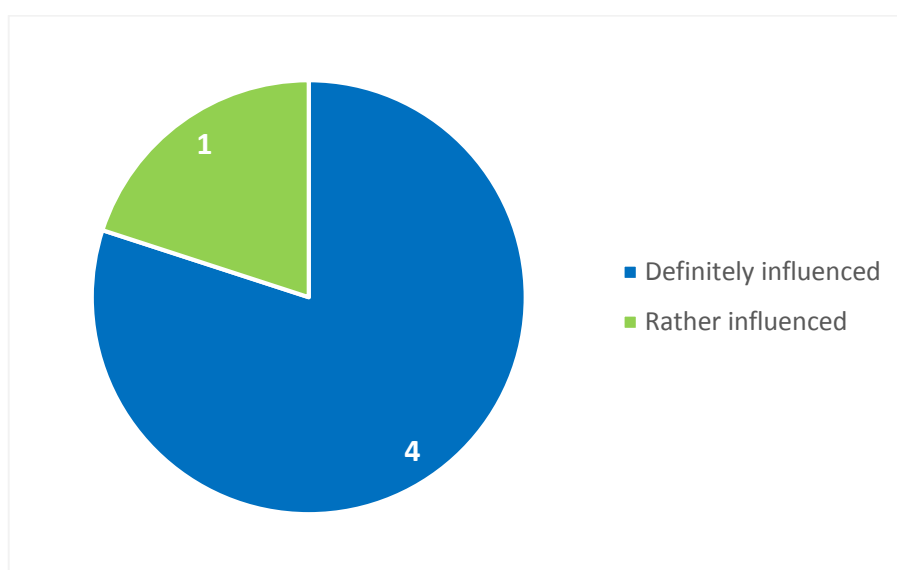
Figure 57. To what extent have Erasmus + projects influenced the integration of ICT into higher education curricula?

If 3 experts out of 5, including a representative of the Ministry of Education, believe that the system of verification and recognition of learning and teaching outcomes in Universities is improving every year, then 2 expert - professors believe that it does not change and remains the same. At the same time, 4 out of 5 respondents indicated that the Erasmus + projects made a significant contribution to the improvement of this system and 1 respondent expressed the assumption that these projects rather influenced its improvement.

As significant results of the Erasmus + project, which made changes in the education system, the representative of the Ministry of Education and Science of the Kyrgyz Republic indicated the introduction of the credit system of education, the exchange of students and teaching staff, the use of competence in standards, state educational standards, as well as the use of the European Diploma Supplement.

As you know, the European Diploma Supplement is an official document developed by the European Commission, the Council of Europe and the UNESCO-CEPES for Higher Education, with the help of which countries mutually recognize higher education documents in accordance with the 1997 Lisbon Convention. The Kyrgyz Republic ratified the Lisbon Convention in 2004.

The Rector of the University believes that the main results of the project are the opening of new directions, a benchmark for the quality of education, and improved communication with employers. Other experts indicated the adoption of a regulatory framework for the implementation of independent accreditation, the development and implementation of the National Qualification System, the introduction of the PhD degree, the introduction of a competence-based approach in the development of curricula, internationalization and recognition of Kyrgyz universities in the international market as significant results of the Erasmus + projects.

In Kyrgyzstan, on May 31, 2013, on the basis of the order of the Minister of Education and Science of the Kyrgyz Republic, an experimental implementation of PhD doctoral programs was started. The introduction of the third cycle of education - PhD doctoral programs, combining the optimal balance between teaching and research activities, coincided with the implementation of Erasmus + projects in the Kyrgyz Republic. The PhD program will shorten the preparation time and award the highest academic degree, which will increase the interest of young people in scientific work and radically solve the problem of "aging" of scientific personnel, says Ch. Adamkulova, Rector of KNU named after J. Balasagyn.

As the expert-professor noted, the main results of the project include the modernization of the course on Public Health, the development of blended learning. *Blended learning (b – learning)* is blended learning that will allow the use of forms of distance education in conjunction with traditional tools.

Sustainability of project results

The representative of the Ministry of Education and Science of the Kyrgyz Republic noted that the Ministry is currently continuing cooperation with foreign universities, coordinators and Universities. Also, 3 out of 4 experts have maintained cooperation with partners.

Among the types of cooperation, experts most often noted work at conferences and round tables, see Figure 58. Partners mutually invite each other to such scientific and practical events. MES KR cooperates on innovative educational technologies; Erasmus + projects have facilitated the ministry's participation in other international projects. Also, some Universities continue to develop joint education programs.
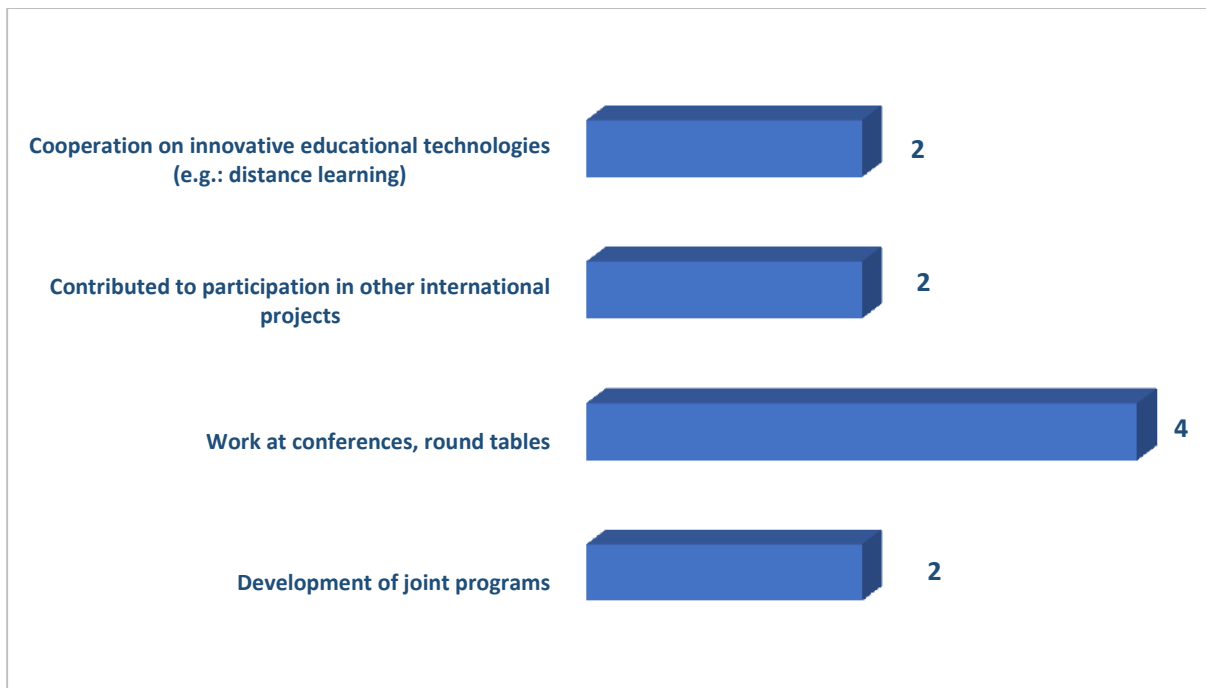
Figure 58. Please indicate ongoing types of cooperation? Human.

Among the ways of cooperation between Universities and the private sector in the Kyrgyz Republic, the more developed respondents noted master classes in Universities, and the less developed Universities introduced products, the results of the country's private sector, for example, software, databases.

An equal number of experts, 4 out of 5, indicated more developed ways of cooperation such as internships for students, support for events for students (hackathons, debates, competitions), participation in job fairs, festivals and career days, and guest lectures. 3 respondents believe that the assistance of enterprises in the formation of an educational program is well organized. And only 2 experts note the organization of Olympiads by the private sector and the establishment of scholarships and grants in more developed areas of cooperation, see Figure 59.
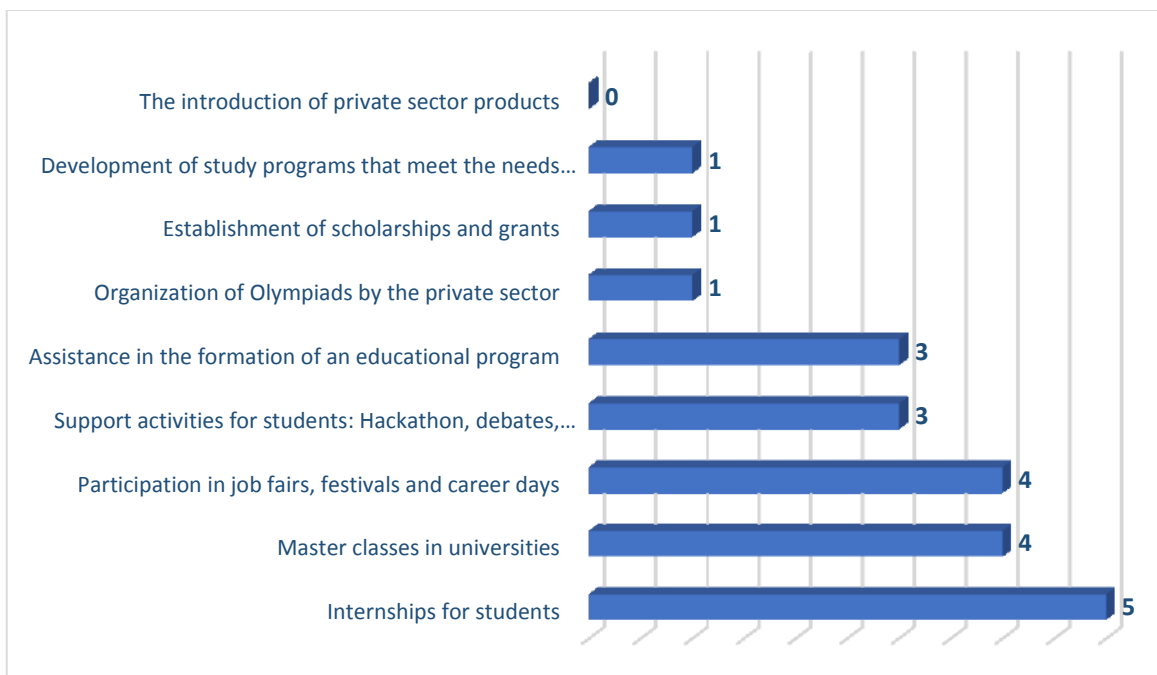
Figure 59. Which ways of cooperation between Universities and the private sector in the Kyrgyz Republic have been developed, and which remain less developed?

Based on forms of cooperation described above, according to experts, under the influence of Erasmus + projects, internships for students, master classes at Universities and participation in job fairs, festivals and career days were highly developed. The survey showed that the provision of free products by the private sector (e.g. software, databases) is the least developed. Less developed are such areas of cooperation as the organization of Olympiads by the private sector and the establishment of scholarships and grants. The representative of the Ministry of Education and Science of the Kyrgyz Republic also noted such a form of cooperation as the development of educational programs that are more in line with the needs of the market.

Most of the experts, 4 out of 5, agree with the statement that "Educational and training materials developed within the framework of the CBHE Projects better reflect the needs of the labor market". In addition, the experts noted that this provides a more accurate approach to the realities of the market, since all parties are involved in the process of creating educational and training materials. Employers have begun to be active and understand the importance of this process. The Rector also agrees with the statement described, since the development of training materials uses the experience of European partners, as well as local demand for skills from employers.

The experts almost unanimously agreed that Erasmus+ projects contribute to inclusiveness of education (3 experts agreed fully, 2 - rather agree), strengthening the democratic values and fundamental human rights (4 agreed fully, 1 - rather agree), increasing the social, civic and intercultural competence of students (4 fully agreed, 1 disagreed). The experts noted:

"The Erasmus+ projects were pilots to introduce these topics into HE systems in Kyrgyzstan." *(representative of the Ministry of Education and Science of the Kyrgyz Republic)*

"The projects are aimed at creating new programs, courses, trainings using modern approaches, based on democratic values" (expert).

"Trainings in European countries made it possible to get acquainted with science, education and culture on the ground" (expert).

According to the experts, the main factors that helped to maximize or scale the impact of projects at the system / policy level of higher education were:

- Sustainability of project results;
- Innovativeness of project results at the country or industry level;
- High significance of the project results for the national policy priorities in
  the field of higher education;
- Effective project dissemination activities.

Among the weaknesses of the Erasmus+ Program in general, or projects in particular, one expert noted that funding was insufficient. The second expert noted several points: "*it is desirable to exempt from taxes, since salary in a monthly equivalent is low, a single two-stage tender for equipment is realizable, but it contains many risks associated with difficulties in making collective decisions, fluctuations in the euro rate*". The third expert drew attention to the need to preserve results and evaluate*: "Projects should live and improve after completion. We need a monitoring system. "*

To the question "What results did the Erasmus+ Program fail to achieve and what recommendations for improving project implementation would you give?" the following responses were received:

"There is no motivation in projects for private sectors to participate and get involved in projects."

"In general, the introduction of something new is always met with opposition, so there will always be difficulties. The main thing is to ensure the sustainability of the project results".

"All results can be achieved with good management."

Conclusions and Recommendations of the National Impact Study

Conclusions at individual level

Bachelor's programs are most actively involved in Capacity Building in Higher Education projects, Master's programs are also involved, with a small margin, but rather actively while PhD and specialist programs are presented in projects of Erasmus + and in isolated cases.

Modernized or newly created courses within the framework of the Erasmus + projects are taught mainly at the "mandatory course" and "elective courses" level. In rare cases, they are added to the curriculum as "electives".

The developed educational programs are mainly composed in Russian, every third program / course is in English and ten times less composed in Kyrgyz. The teaching staff of the Erasmus + projects participated in the development of at least one curriculum. Some teachers showed particular activity, taking part in the development of two, and even 3-4 training courses during the implementation of the projects.
More than half of the faculty that are surveyed participated in the modernization of certain training courses. At the same time, the overwhelming majority confirmed retraining or having studied of new interdisciplinary areas. As a result of a strong positive impact of the project on the faculty, almost all gone though an advanced training, every tenth retrained from one area to an attractive other area for themselves, and every second studied a new field within the framework of their academic interests.

The results of the study allowed us to conclude that for the main part of the developed programs online training systems have been introduced. So for these purposes, the online platforms used were: Moodle (52.6%), AVN (35.8%) and in exceptional cases, iMSEP, Zoom, Google Classroom, WebEx, Cisco. The instructors that interviewed generally appreciated the quality of the developed course design and methodology in which they participated. (49.5% of the respondents marked the "four" out of five and 43.2% marked the "five").

Exchange of experience and opinions on training programs, transfer of knowledge about professional skills and abilities, practice, learning from others, use of innovative tools and work technologies and successful completion of training programs for faculty and employees of partner universities - are the most significant results of the implementation of the developed courses within the framework of Erasmus + projects according to the majority of the surveyed faculty.

An important result of the introduction of new or improved training courses within the framework of Capcity Building in Higher Education projects is an increase in the number of students and undergraduates in educational programs (37.9) and the number of employment of graduates according to their specialization (16.8%).

The overwhelming majority of the instructors interviewed have received the training required to work in the framework of Capcity Building in Higher Education projects. Of these, most noted the passing

of specialized courses on the program, courses on curriculum development and the introduction of online and remote tools / platforms onto the educational program. Quite often, the respondents mentioned taking courses on methods of innovative forms of teaching / interactive educational technologies / pedagogical skills / methods of statistical calculations.

As a result of the continuing education / training courses taken, the teachers improved their communication skills and their technical / IT skills the most. About half of the surveyed respondents achieved improved project management and research skills. A third of the teachers surveyed noted an improvement in intercultural and special competencies / knowledge by profile, as well as linguistic skills. The same number of respondents noted improvements in social competencies, skills in developing innovations, start-ups, entrepreneurial skills, and skills in transforming problems into projects. One in four of the respondents surveyed confirmed an improvement in transverse / behavioral skills, networking skills, cooperation and partnerships to advance the overall goals of the project, and one tenth of the respondents noted an improvement in marketing and product or service promotion skills.

Most often, these skills are applied in the development of training courses / curricula / modules and in the creation of training methodologies, guidelines, methods and approaches for teaching and assessing knowledge. Every second teacher applies these skills in research / analysis (publication / literature review, etc.) and creation of services (e-learning platforms, educational resources, databases, etc.). Also, the acquired skills are successfully applied in building and strengthening partnerships, a network of institutions / professionals and virtual communities.

The respondents unanimously confirmed the existence of the necessary conditions for obtaining the unimpeded information necessary to carry out the work on the developed course. At the same time, the working group of the project was as open as possible, accepted proposals, and took into account the practical needs of teachers.

An analysis of the self-esteem of the respondents of the attended language courses shows an improvement in indicators for all levels of language knowledge by one and a half to two times, in some cases, an increase in language proficiency by three times.

The contribution of the project components to the professional development of teachers as a whole is highly estimated by the teachers themselves. The highest level of contribution was noted for the positions such as "Improving the material and technical base of the university", "Intercultural communication", "Implementation of innovations, ICT technologies", "Participation in international cooperation activities" and "Academic mobility". A good level of project contribution was noted for the positions "Introduction of new teaching methods, approaches", "Language learning" and "Development of products and services".

The indicators of the impact of partnerships between universities were also rated highly by the teachers. The overwhelming majority of respondents noted active cooperation both between universities in Kyrgyzstan and with foreign universities. Moreover, cooperation is being established with professional and industry associations and government agencies and departments.

The most effective forms of collaboration based on the research results were in the areas of joint curriculum / course development, laboratory creation and guest lectures. A third of the respondents noted the organization of summer and winter schools as the most effective form of cooperation and the introduction of the Bologna process.

More than half of the surveyed respondents rated the level of partner interaction of their university as "five" in achieving project results, and a third of the respondents rated this indicator as "four". At the same time, in the opinion of the overwhelming majority of the interviewed faculty, this interaction continues at the present time (upon completion of the project). For example, cooperation continues in networking, networking between partner universities, exchange of experience, practices and in the continuation of the development of curricula, courses, as well as the organization of guest lectures, trainings and conferences in an online format. The interviewed teachers conduct scientific research and jointly prepare articles and publications.

The communication and spreading of the projects is confirmed by the active participation of the faculty in various events. 35% of respondents participated in conferences / events 1 to 3 times to present the results of projects. Slightly fewer respondents participated with presentations at more than 20 conferences / events and a quarter of respondents presented project results at conferences / events 3 to 6 times. Every tenth interviewed respondent presented the results of projects in different events from 10 to 15 times.

73% of the interviewed teachers had the opportunity to publish in the framework of the Capacity Building in Higher Education projects. More than half of them were published at least 1 to 3 times.

As the teachers assured, that within the framework of the Capacity Building in Highter Education by the Erasmus + projects, there were purchased basic equipment (computer, printer, laptop, server, Wi-Fi router) for each participant's university, multimedia products (interactive board, projector, Pirogov's table, etc.) (65.3%), equipment for resource centers (54.7%). Every second university has developed and published monographs, educational and methodological literature and other publications, equipped laboratories (38.9%) and developed online platforms, specialized software (36.8%).

Most of the teachers are proficient in the operation of specialized equipment and programs. Among them, less than half are proficient at a professional level and half of the respondents admitted that they rather speak, but are still studying. Almost all teachers interviewed noted that these facilities continue to function properly at the present time (eg: maintenance, supply of raw materials, renewal of licenses, etc.).

The most effective channels for disseminating the results of the project are the university website, social networks (facebook, instagram, twitter, tik-tok, linked-in), booklets, brochures, information sheets and the project website. Less popular channels for disseminating information are publications in periodicals, news agencies and TV, radio programs.

Erasmus + projects have helped universities in promoting new initiatives in the framework of national / international cooperation, which is reflected in a large number of achieved memorandums of cooperation with partner national and foreign universities, manufacturing companies and the civil service and local government bodies. The sustainability of the project's results is also ensured by the intensification of scientific research, the introduction of new methodological developments and joint publications.

Thanks to the Erasmus + projects, a large number of internships, training seminars and the introduction of the new teaching methods have been carried out. Also some work has been established in the network, associations of universities and their partners. Improving the knowledge, skills and abilities of the participants in the student and teacher exchange program gave good results in ensuring the sustainability of the project, many students upon arrival opened their own business and actively participated in various projects, teachers honed their teaching skills and were actively involved in the development of new and improvement of existing educational programs.

Almost all of the interviewed teachers confirmed that the programs and courses they have developed are being taught after the completion of the project. In the opinion of the overwhelming majority, recruitment is being carried out for the bachelor's and master's programs developed within the framework of the Erasmus + project and at the present time. Among those who replied that there was no recruitment for bachelor's and master's programs, were representatives from OshGu (EPCA 2017), Adam University (EUR BIQ 2015), IUK (CACTLE 2015), ISU (ROAD 2016), DzhaSU (ROAD 2016), Osh State University (Kyr Medu, 2015).

Conclusions at institutional level

15 universities of the Kyrgyz Republic took part in assessing the impact of Erasmus + projects on increasing the potential of universities. These are the central leading universities located in Bishkek (9 units), as well as mainly state universities in the cities of regional significance (6 units). The questionnaires prepared specifically for universities were completed by a total of 26 respondents from among the leaders who were aware of the university's participation in Capacity Building in Higher Education projects. In general, the respondents accurately indicated the names of the projects in which their university took part since 2015.

The level of awareness of heads of universities (rectors and vice-rectors) about the progress and results of projects was very high - the vast majority of managers were fully aware of the progress of their university's participation in projects. This was important because such administrations fully supported the faculties and teachers selected to participate in the Capacity Building in Highter Education projects. The main reason, in our opinion, is the scale and complexity of almost all Erasmus + projects. 81% of respondents noted that their leaders took an active part in the implementation of the Capacity Building in Highter Education projects. For the effective implementation of an international project, coordination and support at the administration level plays an important role, because all Erasmus + projects relate not only to the subject part, but to the entire administrative structure of universities: international department, academic department, scientific and technical / methodological department / council, accounting and etc.

At the same time, this study shows that if quality control of project implementation is institutionalized, for example, in the form of a council designed to control the quality of university projects, then this has a positive effect on the achievement of the planned indicators of projects and on their sustainability. With the globalization of higher professional education, such advice is necessary for all universities, since the successful or unsuccessful participation of the university directly affects their image and future prospects. Such councils are available only in 6 universities out of 15 surveyed: KNAU, KEU, KSUCTA, OshTU, KSTU and at AIU. Among other universities, including such large universities as Osh State University, KNU, KSU, councils for monitoring the quality of project implementation have not yet been created. The results of this survey have shown that where there is such a body or council, there is more often control over the implementation of projects.

Almost all participating universities (86.7%) are completely satisfied with the results of their participation in the CBHE projects. According to the results of projects on CBHE in 13 universities out of 15 (86.7%), changes were introduced into the documents of the strategic development of the university / faculty. Changes were not introduced only in KSTU and NSU.

CBHE projects have had a complex impact on the strategic goals of the development of universities. First of all, this is an improvement in the material and technical base of universities, which was noted by all universities except KNU. Created video conference classes (KyrMedu), biomedical laboratory (based on KSMA), creative laboratories (EUCA-Invest), GIS laboratories (EPCA based on I. Arabaev KSU and Osh State University), incubators, online platforms and electronic versions of the modules and other infrastructure turned out to be very timely, and directly influenced the level of readiness of universities for distance learning before Covid-19. This was noted by the respondents. This especially helped regional universities, which have fewer resources for building up their material and technical base.

Specialized programs and laboratory equipment are of the greatest value, both in terms of cost and in educational terms. It is they who ultimately determine the completeness of conceptual knowledge, primarily of the teachers themselves. Basic office equipment was purchased at 14 out of 15 universities (93.3%). And only 11 universities (73.3%) purchased specialized laboratory equipment during their participation in projects. In order not to distract project funds, universities could acquire basic office equipment outside of participation in international projects.

The other side of the issue of material and technical equipment is the ability to use specialized programs and laboratory equipment. Only 4 universities (26.7%) have specialists with such knowledge and skills to work on specialized equipment and software applications. In 3 universities (20%) equipment and software applications are not fully functional. These are such universities as KSTU, Osh State University and MVShM. The first two universities more than all other universities, participated in the CBHE projects.

Erasmus + projects have had a strong impact on expanding and establishing cooperation with other universities. 73.1% of respondents noted that such cooperation has expanded and improved. 96.2% of survey participants noted that they acquired knowledge / innovation from their partners from other countries. Collaboration at the university level opens up a whole range of quality benefits. At the time of this survey, 69.2% of respondents noted cooperation in supporting student mobility; 65.4% - teacher mobility; 57.7% - development of joint training programs; 30.8% - joint research.

The survey has shown that most often universities have maintained cooperation with local and foreign universities. But the level of cooperation with partners represented by companies and with industry / professional associations turned out to be lower (stable preservation was noted in 9 out of 15 universities).

11 universities (73.3%) noted that participation in Erasmus + projects on CBHE improved the quality of education in their universities. As you know, this is a multifaceted indicator. The factors noted above, as well as a whole range of intellectual products, affect the quality of education. But the key factor is the quality of educational programs of universities, which indicates the content and amount of knowledge and skills intended for compulsory assimilation. Modern curricula were developed and / or modernized in all surveyed universities. In 12 universities out of 15 (80%), new curricula were designed for the undergraduate level. For the master's degree, new curricula have been developed in 9 universities (60%). In two universities, curricula were developed for PhD (KSTU and MVSM). All study programs are ECTS-compliant, interdisciplinary, linked to the digital platforms of universities. At 8 universities (53.3%) new curricula were developed in English and at 1 university in German. Representatives of the private sector (57.7%), industry associations (42.3%), state and municipal institutions (34.6%) and students were most involved in the development of curricula.

Most of the new curricula (73.1%) in the 2020-2021 academic year have been introduced into the educational process and are taught, which indicates the sustainability of the CBHE projects. Also, universities continue to use e-learning platforms, training materials, methodological manuals. At universities, they have preserved and use the results of projects on the CBHE at KSU, KNAU, MVShM, NSU, IUA, OshTU.

The CBHE projects have positively influenced the strengthening of the qualification potential of university departments for international relations. A clear improvement was noted by 57.7% of respondents. These are such universities as GU "Adam", KSU, IUA, OshTU. In 13 universities out of 15 surveyed, documents were adopted aimed at supporting internationalization, deepening into the international academic space, to international standards. Among the respondents, this was noted by 88.5% of the survey participants.

In order to widely inform about the project, 14 universities out of 15 (93.3%) held events where they presented projects on the CBHE.
11 out of 15 universities noted that the experience obtained during the implementation of projects is used in other schools and departments, see the data in Figure 16. These are universities such as: KNU, KSTU, KNAU, ISU, KEU, OshTU, KSU, MVShM, NSU, TSU, IUA.

Additional funding for the use and further development of the project results was received by 5 universities from the entire set of surveyed universities. It is necessary to educate the administration of universities in what ways the results of projects can be kept in working order and how to develop them in the future. 4 universities (KSTU, KNAU, Osh State University, MVSM) noted that they also attract funds from other grants and projects to support the purchased equipment. For aforementioned support, MVSM, among others, attracts funds received through the provision of paid services / commercialization of objects opened through the Erasmus + projects.

Conclusions at national level:

According to the experts, the Erasmus + projects are fully consistent with the Strategy for the Development of Education in the Kyrgyz Republic, contributed to the improvement of the quality of higher education curricula; opening up new directions; improving communication with employers; internationalization of education and inclusion; influenced the creation and development of a national qualifications framework in the Kyrgyz Republic based on the European qualifications framework for higher education; contributed to the promotion and use of digital tools in the HE system; integration of ICT into higher education curricula; introduction of a three-tier education system; development of the credit system in educating.

Among the types of cooperation with foreign partners, experts most often noted the value of work at conferences and round tables. Regarding local partners, all experts unanimously noted that the Erasmus + projects contributed to the improvement of knowledge exchange among the universities of the Kyrgyz Republic.

The least impact, according to experts' opinions, was the approach in including the results of scientific research in the curriculum. This assessment is in line with that of these university administrations, who also concern that the inclusion of research results in curricula remains low.

Recommendations

Recommendations at individual level

Explore the possibilities and limitations of the development of PhD and doctoral programs through involvement in Erasmus + projects and popularization of this level of education among local students or applicants among partner universities of neighboring countries. Judging by the available statistics, there is a relatively low level of involvement of PhD programs in Erasmus + projects by the CBHE.

Educational programs / training courses within the framework of Erasmus + projects are composed mainly in Russian, three times less in English, and rarely in Kyrgyz. For better integration and dissemination of project results, there is a need to support the introduction of educational programs / training courses in the Kyrgyz language, since many regional universities with a contingent of youth from the Kyrgyz-speaking rural population are represented in the Erasmus + projects. At the same time, create and actively develop educational programs / training courses in English for city and metropolitan universities for better integration into the international educational space.

Judging by the self-assessment of knowledge, the provided language courses within the framework of the CBHE projects have shown their effectiveness. It is recommended to further intensify and disseminate the conduction of language courses with a large coverage of the teaching staff in the universities involved in the CBHE projects.
Strengthen cooperation with professional and industry associations and government agencies and departments with detailed development of cooperation mechanisms for each of the parties.

Strengthen the partnership interaction between universities in the development of the scientific potential of the faculty. As the results of the research, on the main areas of interaction between universities after the completion of projects show, the indicator of scientific research and the conduct of joint preparation of articles, publications are not actively developed in comparison with other indicators.

Among those who answered that there is no recruitment for the bachelor's and master's programs created within the framework of the Erasmus + by CBHE programs, were representatives from OshGu (EPCA 2017), Adam University (EUR BIQ 2015), MUK (CACTLE 2015), ISU (ROAD 2016), JGU (ROAD 2016), Osh State University (Kyr Medu, 2015). It is recommended to conduct monitoring in these universities in order to identify the reasons for non-recruitment and track the sustainability of the project results.

Recommendations at institutional and national levels

It is necessary to recommend to Higher Education Institutions to create a body / council that is called upon to monitor the quality of projects and work to ensure the sustainability of project results. This communication body could play the role of a dispatcher, responsible for receiving and transmitting project results, fixing all information and documents.

Erasmus + projects create research potential in universities of the Kyrgyz Republic. Research potential in universities is weak. To strengthen it, the Ministry of Education and Science of the Kyrgyz Republic needs to work among universities so that, when participating in international projects, universities, instead of buying laptops and furniture, acquire specialized programs and laboratory equipment.

The ability to work on specialized programs and laboratory equipment must be constantly improved. Universities need to support teachers who are going to improve their qualifications. It is necessary to pay teachers travel expenses and the cost of specialized courses, summer schools, seminars; and / or invite specialists to their universities.

It is important to maintain cooperation with other universities, which is possible when initiating joint research, exchange projects, concluding memoranda, invitations for publications in their journals, on university websites, and so on. This measure - "Preserving and expanding cooperation" must be included in the university documents of the strategic development.

Curricula in only two universities were developed in the Kyrgyz language, which is weak spot of the project. On the one hand, the majority of students from the villages study at regional universities; on the other hand, the process of introducing science into universities is under its way. The development of curricula within the framework of international educational projects will contribute to the formation / revision / consolidation of scientific terminology in the Kyrgyz language.

ANNEXES

Annex 1. Erasmus+ CBHE Projects in Kyrgyzstan

Abbreviation	Full name of the project
KyrMedu 2015	Advancing University Education in Biomedical Engineering and Health Management in Kyrgyzstan
EurDIQ 2015	European Dimension in Qualifications for the Tourist Sector
EUCA-INVEST 2015	Investing in Entrepreneurial universities in Caucasus and Central Asia
IUCLAND 2015	International University Cooperation on Land Protection in European-Asiatic Countries
MIND 2015	Management -Innovation -Development
CACTLE 2015	Central Asian Center for Teaching, Learning and Entrepreneurship
LMPT 2016	Licence, Master professionnels en formation ouverte et à distance pour le développement du tourisme durable en Chine, au Vietnam et au Kirghizstan
ROAD 2016	Regional Objectives of Administrative Development
HECAFS 2016	Higher Education for Central Asia Food Systems and Standards
TUTORIAL 2016	STrengthening Network EdUcaTiOn,Research and Innovation in Environmental HeALth in Asia
PAWER 2016	Paving the way to interregional mobility and ensuring relevance, quality and equity of access
ProdLog 2017	Development of a Bologna-based Master Curriculum in Resource Efficient Production Logistics
EPCA 2017	Environmental Protection in Central Asia (EPCA): Disaster Risk Management with Spatial Methods
CANERIEH 2012	"Central Asian Network for Education, Research and Innovation in Environmental Health"

Annex 2. Draft Questionnaires

Questionnaire for teachers

This is a national study on the impact of Erasmus + projects on Capacity Building in Higher Education (CBHE) in the Kyrgyz Republic. The purpose of the study is to determine what institutional and structural impact the projects have had on the higher education system, universities, organizations and individuals, and how sustainable the results are. This questionnaire is filled in anonymously on behalf of the teaching staff of the university participating in the Erasmus + projects.

In the line "Other" you can write your answer, additions or explanations. The Erasmus + program in the Kyrgyz Republic thanks in advance the teaching staff of the university for their assistance in completing the questionnaire in full and on time. If you have any questions about the content of the questionnaire, or some of the questions of the questionnaire are not clear, then please contact us by number ... or by mail ...... We will be happy to answer all questions.

What university do you work at?

Which project did you participate in?

Block A. DEVELOPMENT AND MODERNIZATION OF CURRICULA / TRAINING COURSES

In the development of which innovative curricula and training courses have you participated in the CBHE project at your university?

Course title:

Name of the educational program:

What level of specialists is this curriculum/training course developed for?

Bachelor   Master

In development of how many types of curriculum / training course have you been involved as part of the CBHE project at your university?

1   2   3   4

Have you participated in the modernization of any curriculum/ training courses?

1. Yes   2. No

If yes, so in which course modernization did you participate?

Did your participation in the project lead to retraining or the study of new interdisciplinary areas?

1. Yes   2. No

What exactly led to, please mark the option you want.

2. Retraining

3. Professional development
4. Studying a new direction within the framework of your academic interests

In development of which interdisciplinary course have you been involved?

Have e-learning systems been developed to facilitate student access to these courses?

1. Yes   2. No

What e-learning systems have been used to facilitate student access to these courses?

1. AVN
2. Moodle
3. Other

How satisfied are you with the quality and methodology of course development in which you participated? Rate 1 to 5, where 1 is the lowest level of satisfaction and 5 is the highest level of satisfaction.

What are the results of the implementation of the developed courses within the framework of the CBHE project?

The training program was successfully completed by the teaching staff and employees of partner universities
The number of employment of graduates in the specialization has increased
Teachers can share the acquired knowledge and improve professional skills and abilities, practices
The teachers exchanged experiences and opinions on the content, methods and approaches to the curriculum
There was an opportunity to use innovative tools, work technologies developed within the framework of the project
The number of students enrolled in the educational program has increased

Block B. SKILLS ACQUIRED

Did you have the opportunity to take the training (refresher courses) necessary for your work in the framework of the CBHE project?

1. Yes
2. No

What refresher courses / training did you take (participation in trainings, seminars)? *List the name of the course*

What qualifications and competencies have been acquired / improved within the framework of the CBHE project *(List the skills you have acquired within the framework of the PVP project)*
Project management skills

Skills for transforming problems into projects

Transversal / Behavioral Skills

Technical / IT skills

Scientific / research skills

Communication linguistic skills

Skills in marketing and promoting a product or service, other)

Skills for developing innovations, start-ups, entrepreneurial skills

Skills of networking, cooperation and partnerships to advance the overall goals of the project

Intercultural competences

Social competences

Special competencies\ knowledge by profile

How do you use these skills in practice?

In the development of teaching methodologies, guidelines, methods and approaches for teaching and assessing knowledge

In the development of training courses / curricula / modules

In research / analysis (publication / literature review, etc.)

In the creation of services (e-learning platforms, educational resources, databases, etc.)

In building and strengthening partnerships, networks of institutions / professionals, virtual communities

Other

Have the conditions been created for obtaining unimpeded information necessary to carry out your work on the developed courses?

1.Yes 2. No

How often did the project team accept your proposals, took into account your practical needs?

1. Always
2. Often
3. Rarely
4. Never

Have language courses been organized for the teaching staff of the University?

1. Yes 2. No

How do you rate your language skills before and after completing these courses?

Before starting these courses		**After completing these courses**	
Level	Competence	Level	Competence
A1	Below average	A1	Below average
A2	Beginner	A2	Beginner
B1	Medium	B1	Medium

B2	Above average	B2	Above average
C1	Advanced	C1	Advanced
C2	Expert	C2	Expert

How would you rate the contribution of the project components to your professional development? *(Rate 1 to 5, where 1 is the lowest contribution / influence / impact and 5 is the highest contribution / influence / impact).*

Academic mobility	
Language learning	
Participation in international cooperation activities	
Introduction of new methods, teaching approaches	
Improving the material and technical base of the university	
Implementation of innovations, ICT technologies	
Product / service development	
Intercultural communication	

BLOCK C. IMPACT OF UNIVERSITY PARTNERSHIP

What organizations have you worked with / your University has collaborated with in the framework of the CBHE project?

1. Other Universities in Kyrgyzstan
2. Foreign universities
3. Professional, industry associations
4. Government agencies and departments
5. NGOs
6. Production organizations and enterprises
7. Other

What are the most effective forms of cooperation in your opinion:

1. Joint development of curriculum / courses
2. Organization of guest lectures
3. Organization of summer and winter schools
4. Creation of laboratories, resource centers
5. Implementation of the Bologna process
6. Other

How do you rate the level of interaction in achieving project results? *(Rate it on a 5-point scale, where 1 is a low level of cooperation, 5 is a high level of cooperation).*

Is this interaction ongoing (after the completion of the project), and if so, how?

Yes
Not

Block D. PROJECT DISSEMINATION

Indicate the number of conferences / events where you presented the results of the project

Indicate the number of publications / articles / research with your participation in the project

How was the material and technical equipment of your university improved within the framework of the CBHE project?

1. Development and release of educational literature, monographs and other publications
2. Purchase of multimedia products (interactive whiteboard,)
3. Servers
4. Computers / printers
5. Internet access / Wi-Fi router, server
6. Equipment for resource centers
7. Lingaphone rooms
8. Equipment of laboratories
9. On-line platform development
10. Other _____

What channels of information dissemination about the results of the project were the most effective? *(no more than 2-3 answers)*

Through social networks (facebook, instagram, twitter, tik-tok, linkedin)
Booklets, brochures, information sheets
Through the Uuniversity website
Project web-site
TV, radio programs
Publications in periodicals, news agencies

Block E. SUSTAINIBILITY

How the CBHE projects have helped your University to promote new initiatives in the framework of national / international cooperation (For example, memoranda of cooperation, research projects, joint publications, teaching aids, participation in networks or associations, etc.) (Please write down)

Are the developed programs and courses on completion of the project currently being taught?

Yes   No   I find it difficult to answer

How many students have received these courses in the last 2 years?

Have you been recruiting for new undergraduate and graduate programs in the past 2 years?

Yes   No   I find it difficult to answer

How many trainees have completed these program/ courses?

What achievements among the students of courses and programs have resulted from the results of the project at the end of the project?

Yes   No   I find it difficult to answer

What achievements among the students of courses and programs have reached based on the project results after its completion?

The number of employed graduates has increased

Established sustainable interaction with employers

The publication activity of teaching staff has increased

Improved quality and content of curriculum / course development throughout the university

The student-centered approach to teaching is actively spreading (analysis of training needs, analysis of demand and supply of the labor market)

Increasing the number of innovative multi-disciplinary curricula / courses

The gap between demand and supply in the labor market has decreased in the specialties of the CBHE project

The number of start-up projects among students, undergraduates has increased

The results of the project were not useful to our university after its completion

Thank you very much for participating in the study!

Questionnaire for University management

This is a national impact study of Erasmus + projects on capacity building in higher education in the Kyrgyz Republic. The purpose of the study is to determine what institutional and structural impact the projects have had on the higher education system, universities, organizations and individuals, and how sustainable the results are. This questionnaire is filled in on behalf of a representative of the University management participating in the Erasmus + projects.

In the line "Other" you can write your answer, additions or explanations. The Erasmus + Program in the Kyrgyz Republic thanks in advance the University management for their assistance in completing the questionnaire in full and on time. If you have any questions about the content of the questionnaire, or some of the questions of the questionnaire are not clear, then please contact us by number ... or by mail ...... We will be happy to answer all questions.

1. What is the name of your institution of higher education? Select a university from the list:

2. What Erasmus + projects did your university take part in?

BLOCK 1. INSTITUTIONAL STRATEGY AND ALIGNMENT OF OBJECTIVES OF CBHE PROJECT

How satisfied is the University's management with the results of the university's participation in the project?

1. Highly satisfied
2. Rather satisfied
3. Rather dissatisfied
4. Absolutely dissatisfied
5. Other: _____

What are the strategic goals of your University / faculty that the project results contribute to? (NO MORE THAN 3 ANSWERS)

1. Improved the quality of education
2. Introduced deeper into the methodology of the Bologna Process
3. Influenced the development of scientific and applied research at the university / faculty
4. Interaction with employers has become more active
5. Cooperation with other Universities has expanded and improved, incl. foreign
6. Our University has become more competitive among other Universities in the country
7. Improved and facilitated the process of student exchange with other Universities
8. Students were actively involved in the development / modernization of curricula
9. Improved material and technical base
10. Other: _____

As a result of the project, have any changes been introduced into the strategic development documents of your University / faculty?
1. Yes
2. No

3. Other: _____

How aware were the management of the University about the progress / results of the project?
(for example, rector, vice-rectors, dean, director).
1. At a high level, there was complete awareness
2. At the intermediate level
3. At a low level, there was fragmentary awareness
4. Another answer: _____

Did your University leaders take an active part in the project (for example, led the quality council, contributing to the project strategy)
      1. Yes
      2. No
      3. Other

Has your University implemented other projects that have important synergies with your project?
1. Yes
2. No
If the answer is "Yes", what is the name of another project / projects?
Write: _____

What languages have the project results been translated into?
1. Kyrgyz
2. English
3. Other language: _____

Does your university have a body, council, which is responsible to control the quality of projects in which the University participates?
1. Yes
2. No
3. Other: _____

Was the Erasmus + project supervised by a quality board or other similar quality control body?
1. Yes
2. No
3. Other: _____

BLOCK 2. REFORM OF CURRICULA

What curricula has your University / faculty managed to modernize or develop through participation in Erasmus + CBHE projects? Please write their names?
1. _____
2. _____
3._____

4. We have not developed training programs. PROGRESS to the next block.

What level of higher professional education are these curricula included in? (Bachelor's, Master's, PhD, Specialty)

1._____

2. _____

3._____

4. Other: _____

What is the status of these curricula? (Compulsory course, Elective course, Optional)

1. _____
2. _____
3. _____
4. Other: _____

In what language?

1. _____
2. _____
3. _____

Which of the following parties were really involved in the development / modernization of the curriculum?

1. University students
2. Private sector representatives, industry organizations
3. Professional and industry associations
4. State institutions
5. National Academy of Sciences of the Kyrgyz Republic
6. NGOs
7. Other**: _____**

Are these curricula being taught to students this academic year?

1. Yes, all
2. Yes, but not all
3. Not taught yet
4. Other

If not taught, then why? Please write the reasons

1. _____
2. _____

What study programs are in the format of an online course? Please share the links

1. _____
2. _____
3. _____

Do the curricula modified / developed within the framework of participation in Erasmus + projects comply with the European Transfer and Accumulation System (ECTS)?

1. Yes

2. No
3. Other: _____

What other smart products have been developed as part of the project? Please list them according to the following indicators: 1) title 2) link, if online access to the product is provided 3) is the link currently valid.

13.1 Training: _____
13.2 Module of the educational program: _____
13.3 Project website: _____
13.4 Tutorial: _____
13.5 Teaching aids: _____
13.6 Collection of articles: _____
13.7 Research and report on its results: _____
13.8 Guides: _____
13.9 E-learning platforms, databases: _____
13.10 Network of institutions / professionals, virtual communities: _____
13.11 Joint Study Programs / Joint Modules: _____
13.12 Other:

BLOCK 3. BUILDING SUSTAINABLITY

Which of the listed smart products does your University continue to use at the present time (after the completion of the project)?

		yes	no
1	Training	1	2
2	Modules of educational program	1	2
3	Web-site created during the project implementation	1	2
4	Tutorial	1	2
5	Teaching aids	1	2
6	Collection of articles	1	2
7	Research and report on its outcomes	1	2
8	Guides	1	2
9	E-learning platform, database	1	2
10	Network of institutions / professionals, virtual communities	1	2
11	Joint Study Programs / Joint Modules	1	2
12	Other: _____	1	2

What measures have been taken by the university / faculty on information awareness about the project and validate / recognize the results of the project?
   1. A round table/ a presentation of the project were held
   2. Broadcasting about the project on Radio, TV
   3. Published materials about the project on the Internet
   4. Other

If your university / faculty continues to cooperate with project partners at the present time, please indicate the types of cooperation? (S: short-term mobility, joint research, development of joint study programs, internship, invitation to meet with students, fairs, etc.)

1.With domestic Universities: _____

2.With foreign Universities: _____

3. Companies / institutions / organizations: _____

4. With industry / professional associations: _____

5.With others: _____

6. No cooperation

Can you say that during your participation in Erasmus + projects, the international relations department of your University has strengthened, the experience has increased, the foreign language knowledge has improved?

1. Definitely yes

2. Rather yes

3. Probably not

4. No

5. Other: _____

Have strategic and procedural documents been created and adopted at the university / faculty aimed at supporting internationalization, deepening into the international academic space, to international standards?

1. Yes

2. No

3. Other: _____

Does your university have experience in transferring the results of the Erasmus + project to other faculties / departments / structural units?

1. Yes

2. No

3. Other: _____

Has your University received additional funding to use and further develop the results of the project?

1. Yes

2. No

3. Other: _____

What measures have been taken to ensure that the results of the project affect the following target groups: university administration, employers, university partners, professional, industry associations, government agencies, NGOs, others?

Write: _____

BLOCK 4. TECHNICAL RENEWAL

Which of the following facilities was opened as a result of the University's participation in Erasmus + projects?

1. Educational research laboratory
2. Career counseling centers
3. Center for Innovation and Startups
4. Center for advanced training, training
5. Scientific and Methodological Center
6. Language Center
7. Other: _____

What technical equipping of these facilities was carried out through the Erasmus + projects?

1. Basic office equipment purchased (PC, printer, laptop, server)
2. Office furniture purchased
3. Specialized laboratory equipment purchased
4. Reagents, substances, raw materials for scientific work
5. Specialized software
6. Educational literature
7. Other: _____

How skilled is the staff in the use of specialized equipment and software?
1. Professionally, at a high level
2. Rather yes, we are learning
3. Rather, they only know the basics, it is necessary to train the teaching staff even deeper
4. There are problems with skills
5. Other: _____

Do these facilities continue to function properly at this time? (for examples: maintenance, provision of raw materials, renewal of licenses)
1. Yes
2. No
3. Other: _____

If the answer is "Yes", by what means?
1. At the expense of the University
2. Through grants, other projects
3. Through the provision of paid services / commercialization of objects, opened through Erasmus + projects
4. Other: _____

BLOCK 5. TRANSFER OF KNOWLEDGE AND INNOVATION BETWEEN THE ORGANIZATIONS PARTICIPATING IN THE PROJECT

Please list all sectors that were involved in this project (including your organisation's sector)
1. Higher education sector
2. Private sector (enterprises)
3. Non-governmental sector
4. Public sector
5. Accreditation agencies
6. Sector of secondary vocational education
7. Other: _____

To what extent has your participation in the CBHE projects led to the following changes / improvements at your University?

    1. Your University has established more effective methods of cooperation with project partners.
    2. Your University has transferred or acquired knowledge / innovation from its partners in other countries.
    3. Your University's ability to innovate has improved
    4. Your University has adopted more innovative teaching methods / approaches.
    5. Your University has received tangible benefits from participating in this project.
    6. Your University has transferred or acquired knowledge from organizations working in other sectors
    7. Your University has established more effective ways of working with private sector organizations.
    8. Your University works more closely with local / regional / national authorities
    9. Startups were created as a result of your University's participation in the project

If you agree with the statement / statements, please describe a few specific project outputs that led to changes / improvements at your university?
_____ **How many mobilities were implemented during the project participation period? _____**

Please indicate the types of mobility implemented within the project

(quantity)
Student mobility _____
Intensive staff training programs _____
Short-term joint staff training _____
Long-term staff training _____

Thank you very much for participating in the study!

Questionnaire for the HERE - higher education reforming Experts

Since 2014, the Erasmus + Program in the Kyrgyz Republic has implemented 14 projects with the participation of 19 universities in the country. All projects were aimed at capacity building of higher education in the Kyrgyz Republic (CBHE). The purpose of this study is to determine what institutional and structural impact the projects have had on the higher education system and how sustainable the results are. This questionnaire is being completed by the Ministry of Education and Science of the Kyrgyz Republic and experts on higher education reform.

In the line "Other" you can write your answer, additions or explanations. The National Office of the Erasmus + Program in the Kyrgyz Republic thanks in advance the leadership of the Ministry of Education and Science of the Kyrgyz Republic and experts for the complete and timely completion of the questionnaire. If you have any questions about the content of the questionnaire, or some of the questions of the questionnaire are not clear, then please contact us by number ... or write to the mail ... .. We will be happy to answer all questions.

Are you an employee of the Ministry of Education and Science of the Kyrgyz Republic or a team of HERE?
    1. MES KR
    2. Team of Experts

In which Erasmus + projects have you been directly involved?

BLOCK 1. IMPACT OF CBHE PROJECTS ON THE MODERNIZATION OF HIGHER EDUCATION

Was there any mobility within the framework of these projects (a trip to the EU countries or to other countries in order to exchange experience, participation in trainings, project meetings, etc.) of the staff of the Ministry of Education and Science of the Kyrgyz Republic?

    1. Yes
    2. No
    3. We find it difficult to answer
    4. Other

To what extent have Erasmus + projects contributed to the change in the curriculum of higher education according to the following indicators? (mark on a 5 point scale, where 1 point is the least; 5 points is the most)

Indicators of change	Scores
Transition to a three-tier system	[…]
Further development of the ECTS system	[…]
Creation and development of a national qualifications framework based on the European qualifications framework for higher education	[…]
Development of a competence-based approach in curriculum development	[…]
Inclusion of scientific research in the curriculum	[…]

Improving the quality and relevance of curricula	[...]
1. Other:	[...]

Participation in Erasmus + projects included cooperation with foreign universities, coordinators and partner universities. Does the Ministry of Education and Science of the Kyrgyz Republic continue to cooperate with them at the present time after the completion of the project?

1. Yes
2. No
3 We find it difficult to answer
4. Other

If the answer is "Yes", please indicate what types of cooperation are ongoing?
Short term mobility
Collaborative research
Developing collaborative learning programs
Work at conferences, round tables
Contributed to participation in other international projects
Cooperation on innovative educational technologies (n .: distance learning)
1. Other types of cooperation:

Can we say that, in general, the Erasmus + projects contributed to the improvement of knowledge exchange among the universities of the Kyrgyz Republic?
1. Definitely contributed
2. Rather promoted
3. Nothing has changed
4. Other

Generally, do you agree that the projects have contributed to solving the following problems in the higher education system?

	I completely agree	Rather agree	Rather disagree	Strongly disagree
Promoting the development of innovative pedagogical approaches, teaching methods	1	2	3	4
Strengthening the response of the higher education system to challenges such as employment and economic growth	1	2	3	4
Promote the development and use of digital tools	1	2	3	4
Increasing the social, civic and intercultural competence of students	1	2	3	4
Integrations between HE, Research and Business (Knowledge Triangle)	1	2	3	4

Eliminating skills mismatches in the labor market	1	2	3	4
Increasing the level of academic achievement in HE	1	2	3	4

BLOCK 2. EFFICIENCY OF CBHE PROJECTS IN PROMOTING CHANGES IN HIGHER EDUCATION SYSTEMS

Did the Erasmus + projects in the Kyrgyz Republic contribute to the development of Educational Standards for University teachers?
1. Yes
2. Rather yes
3. Probably not
4. No
5. Other:
6. We find it difficult to answer

To what extent do Erasmus + projects correspond to the Education Development Strategy in the Kyrgyz Republic?
1. Fully comply
2. Rather conform
3. Rather do not correspond
4. Does not match
5. Other: __

Were the experience and results of the participation of the Ministry of Education and Science of the Kyrgyz Republic in Erasmus + projects taken into account in the development of the "Education Development Strategy in the Kyrgyz Republic for 2021-2040"?
1. Yes, definitely
2. Rather yes
3. Probably not
4. Definitely not
5. Other: _____

If taken into account, then in what directions of the Strategy?
Write: _____

How much have Erasmus + projects influenced the integration of ICTs into higher education curricula?
1. Definitely influenced
2. Rather influenced
3. More likely not influenced
4. Not influenced at all
5. Other

Do you think the system of verification and recognition of learning / teaching outcomes in universities is improving every year or is it stagnant?
1. Improves
2. Stagnant

3. Deteriorates
4. Other:

To what extent have Erasmus + projects contributed to the improvement of this system?
1. Significant contribution
2. Rather influenced the improvement
3. Rather did not affect the improvement
4. Other
Please write here some significant results of the project that have made changes in the education system

---

BLOCK 3. COOPERATION WITH ENTERPRISES IN THE FRAMEWORK OF THE PROJECT

What ways of cooperation between Universities and the private sector in the Kyrgyz Republic have been developed, and which remain less developed?

Ways of cooperation	More developed	Less developed
1. Internships for students	1	2
2. Master classes in Universities	1	2
3. Obtaining free private sector products (for example: software, databases)	1	2
4. Support for student activities: hackathons, debates, competitions	1	2
5. Organization of Olympiads by the private sector	1	2
6. Establishment of scholarships and grants	1	2
7. Participation in job fairs, festivals and career days	1	2
8. Assistance in the formation of the educational program	1	2
9. Guest lectures		

Which of the noted forms of cooperation were developed under the influence of Erasmus + projects? (for example: through the development of career centers, student employment, educational and research centers, laboratories, HR / PR departments, etc.)
1. Internships for students
2. Master classes in universities
3. Free private sector products (for example: software, databases)
4. Support for student activities: hackathons, debates, competitions
5. Organization of Olympiads by the private sector
6. Establishment of scholarships and grants
7. Participation in job fairs, festivals and career days
8. Assistance in the formation of the educational program
9. Other: _____

How much do you agree with the statement that "Educational and training materials developed within the framework of the CBHE project better reflect the needs of the labor market"? (Please give a comment)

BLOCK 4. CONTRIBUTION OF THE CBHE PROJECT TO SOLVING BROADER SOCIO-ECONOMIC PROBLEMS

Do you agree that Erasmus + projects contribute to the following in the higher education system?

	Strongly agree	Rather agree	Rather disagree	Strongly disagree
Increasing social inclusion / non-discrimination	1	2	3	4
Inclusive education	1	2	3	4
Strengthening democratic values and fundamental human rights	1	2	3	4
Increasing the social, civil and intercultural competence of students	1	2	3	4

If you agree, please describe the result of the project on this issue?

BLOCK 5. FACTORS THAT HELPED TO MAXIMIZE THE IMPACT OF THE CBHE PROJECT

In your opinion, what are the main factors that have helped to maximize or scale up the impact of projects at the higher education system / policy level? (Choose up to five options)

1. High quality of project results
2. Sustainability of project results
3. Innovativeness of the project results at the country or industry level
4. High significance of the project results for the priorities of the national policy in the field of higher education
5. Effective selection of international project partners (transnational partnerships)
6. Effective project dissemination activities
7. Synergy with ongoing higher education reform processes that can benefit from project results
8. Effective interaction between different sectors of the project (intersectoral partnership)

What weaknesses of the Erasmus + Program in general, or projects in particular, should be considered for follow-up?
Write:
What results did the Erasmus + Program fail to achieve and what recommendations for improving project implementation would you give?
Write:

Thank you for participating in the study!

Annex 3. The names of the Universities surveyed and the CBHE projects in which they took part

№	Name of HEI	Project title					Total
1	«ADAM" University	EurDIQ 2015	LMPT 2016				2
2	Kyrgyz State University of Construction, Transport & Architecture	KyrMedu 2015					1
3	Jalal-Abad State University	ROAD 2016					1
4	Issyk-Kul State University	KyrMedu 2015	EurDIQ 2015	EUCA-Invest 2015	LMPT 2016	ROAD 2016	5
5	Kyrgyz State Technical University	KyrMedu 2015	IUCLAND 2015	CACTLE 2015	HECAFS 2016	ProdLog 2017	5
6	Kyrgyz State University	CACTLE 2015	ROAD 2016	EPCA 2017			3
7	Kyrgyz National Agrarian University	PAWER 2016	ProdLog 2017				2
8	Kyrgyz National University	MIND 2015	CACTLE 2015	PAWER 2016			3
9	Kyrgyz Economic University	EUCA-Invest 2015	LMPT 2016	HECAFS 2016			3
10	International Higher School of Medicine	IUCLAND 2015	TUTORIAL 2016				2
11	Ala-Too International University	EUCA-Invest 2015					1
12	Naryn State University	KyrMedu 2015					1
13	Osh State University	KyrMedu 2015	TUTORIAL 2016	PAWER 2016	EPCA 2017		4
14	Osh Technological University	MIND 2015	IUCLAND 2015				2
15	Talas State University	KyrMedu 2015	MIND 2015				2
	Total						37

Annex 4. Reform of curricula within the framework of the CBHE projects' implementation

HEI	Title of new curriculum	Level of higher professional education	Status	Language	Parties involved in their development/modernization
«ADAM» University	Sustainable Tourism Development	- Bachelor's Degree	- Elective course	- In English	- HEI's students - Private sector representatives, industrial organizations
KSUCTA	Informatics &Biomedical Engineering	- Bachelor's Degree	- Compulsory course	- In Russian	- State institutions
ZhSU	Strategic management; Human Resources Management; Protected Objects Tourism; Finance & Audit	- Bachelor's Degree - Master's Degree	- Elective course	- In Russian	- HEI's teachers
ISU	Sustainable Tourism Development, Entrepreneurship	- Bachelor's Degree	- Compulsory course - Elective course	- In Russian	- HEI's students - Private sector representatives - Professional & Industrial associations - NGO
KSTU	Information Science in Healthcare, Logistics, Modules on HAACP system, Kas	- Bachelor's Degree - Master's Degree - PhD	- Compulsory course - Elective course	- In Russian - In English	- Private sector representatives, industrial organizations - State agencies - National Academy of Sciences of the KR
KSU	Human Resources Management; Management of territories & economic resources; Local Budget & Finances; Financial Management; Economics of Tourism; Legislative basis of Public & Municipal Services. Project Management;	- Bachelor's Degree - Master's Degree - Refresher courses for civil servants	- Compulsory course - Elective course	- In Russian - In English - In Kyrgyz	- HEI's students - Private sector representatives - State agencies, employees of municipal bodies - Professional, industrial associations, associated partners

	Management, Marketing & Entrepreneurship. Curricula: 1) Natural science direction, profiles - Geography; Ecology and Nature management; Tourism			
KNAU	«Resource efficient production logistics»	- Master's Degree	- Compulsory course	- In English	- Professional&industrial associations
KNU	New discipline was created	- Bachelor's Degree	- Compulsory course	- In English	- HEI's students - Private sector representatives, industry organizations
KEU	Sustainable Tourism (BA), Sustainable Tourism Management (MA), Business Administration (BA)	- Bachelor's Degree - Master's Degree	- Compulsory course - Elective course	- In Russian	1. HEI's students 2. Private sector representatives, industrial organizations 6. NGO
IHSM	Master's Degree Program in Public Health	- Master's Degree - PhD	- Compulsory course - Elective course	- In English	-State agencies - NGO, other HEIs - HEI's students - Private sectors representatives - Professional and industrial association - National Academy of Sciences of the KR
AIU	Course of innovative projects, Entrepreneurship.	- Bachelor's Degree - Master's Degree	- Compulsory course - Elective course	- In English	- HEI's students - Private sector representatives - Professional and industry associations - NGO
NSU	Informatics in Health Care	- Bachelor's Degree	- Compulsory course	- In Russian	- State agencies - HEI's students

					- Professional and industrial associations
OshSU	"Medical Informatics and Bioengineering in Health Care"; "Management in Health Care"; Geo- Information Systems and Technologies and Remote Sensing for Disaster Risk Management; Public Health.	- Bachelor's Degree - Master's Degree	- Compulsory course	- In Russian - In English - In Kyrgyz	- Professional and industrial associations - Private sector representatives
OshTU	"Environmental protection and rational use of land resources"	- Master's Degree	- Compulsory course	- In Russian	- HEI's students - Professional and industry associations
TSU	Health Informatics Study Programs	- Bachelor's Degree	- Compulsory course	- In Russian	- HEI's students - Private sector representatives - State agencies

Annex 5. Knowledge products that Universities continue to use in the 2020-2021 academic year

	KNU	KSU	KSTU	KNAU	ISU	Osh SU	ZhSU	KEU	IHSM	KSUCTA	NSU	SU	ADAM SU	AIU	OshTU
Training	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
Modules of the educational program	1	1	1	1	0	1	0	1	1	0	1	1	1	1	1
Website created during the project	1	1	1	1	0	1	0	1	1	1	1	0	0	1	1
Training manual	1	1	1	1	1	0	1	0	1	0	1	1	0	1	1
Methodical aids	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1
Research and report on its results	0	1	1	1	0	1	0	1	1	0	1	1	0	1	1
Guides	0	1	1	1	1	0	0	0	1	1	1	1	1	1	1
E-learning platforms, databases	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Institutions / Professionals Network, Virtual Communities	0	1	0	1	1	0	0	1	1	0	1	1	1	1	1
Joint Study Programs / Joint Modules	0	1	1	1	0	1	0	1	1	1	1	1	1	1	1
Total	6	10	9	10	6	6	4	8	10	5	10	9	6	10	10