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## IMPLEMENTATION OF APPLIED BACHELOR'S DEGREE PROGRAMS IN KAZAKHSTAN: ANALYSIS OF STAKEHOLDERS' PERCEPTIONS

**Abstract:** Short-cycle educational programs in Kazakhstan are currently represented by applied bachelor degree programs. This first of its kind study was conducted to analyse the perceptions of applied bachelor programs by students, program graduates and employers in Kazakhstan. The results of the survey and interviews revealed a motivation for choosing applied bachelor programs among students of these programs and graduates, as well as the level of satisfaction with their choice. Employers' responses included an assessment of the training provided by the applied bachelor programs and whether programs graduates meet employers expectations. The authors concluded that applied bachelor programs ensure successful integration in the labor market. They provide access to training for socially vulnerable groups (e.g., part-time workers, unemployed people who do not follow traditional educational paths), increasing access to education. The practice-oriented nature of applied bachelor's degree programs allows to obtain qualified personnel in a shorter period of time compared to bachelor's degrees, which is beneficial for employers. Nevertheless, there were revealed problems related to the transition from NQF level 5 to level 6 for higher education, as well as insufficient information work of education providers to explain the advantages and features of applied bachelor degree programs. This suggests a need to take measures to further develop and strengthen the applied bachelor's degree in Kazakhstan. In general, it can be said that development prospects of applied bachelor's degree will contribute to the training of qualified personnel for the labor market.

**Keywords:** Applied bachelor degree, short-cycle educational programs, national qualifications system, education system, higher education, technical and vocational education, labor market, graduates, employers.

### Introduction

The rapid development of new technologies has made it necessary for education systems to undergo radical modernisation. The dynamic development of society creates a rapidly changing labor market and leads to a widening gap between employer requirements and qualifications (Omirbaev et al., 2021). The disappearance of some professions and the emergence of new ones, the replacement of human labor by artificial intelligence requires workers to learn new practical skills, often at an accelerated pace.

In Kazakhstan, the number of students is currently over 600,000 and, according to the Minister of Science and Higher Education, will reach 1 million in six to seven years. It is clear that the education system "will be under enormous pressure" (Kuzekbai, 2022). In this regard, the government needs to enable the expansion of education infrastructure and increase access to educational services in a short time.

Moreover, there has been a problem of imbalance in the Kazakh labor market for several years, namely, a shortage of middle-level employees and a low level of professional

employment among college graduates. It is important to note that youth determine the labor market in the country (60% of all employees), and every year more than 300 thousand young people reach working age, which underlines the urgency of solutions for this problem (Galushko, 2023).

One solution to the imbalance between the theoretical and practical training of graduates is the development and implementation of short-cycle programs focused on practice and providing students with professional knowledge, skills, and competencies that facilitate entry into the labor market (Cremonini, 2010).

According to the International Standard Classification of Education (ISCED) (2011), short-cycle programs were developed with the aim of providing students with professional knowledge, skills, and competencies, focused on specific professions. Short-cycle programs are shorter, practical, and less theoretical than bachelor's degree programs, the main purpose of which is to prepare students for the labor market.

The Bologna Process — which seeks to create an accessible, inclusive, and uniform higher-education system across Europe — was a special incentive in the development of tertiary non-university education, and adds value in terms of compliance with the qualifications provided based on the requirements of the labor market, and increasing employment opportunities for the qualified. Kazakhstan, being a member of the Bologna Process since 2010, has developed and adopted the National Qualifications Framework (NQF) including all levels of education. The 5th level of the NQF in Kazakhstan is represented by applied bachelor programs. The introduction of the programs started experimentally in 2018 in higher colleges, and from 2021 in higher education institutions.

The introduction of applied bachelor's degree programs has served as an additional incentive to attract young people to TVET organizations, having a shorter period of study and lower cost, which is relevant for socially vulnerable groups: part-time workers; students who just finished military reserve; students on maternity leave, etc. The practical orientation of training for specific employer needs makes graduates of these programs attractive to employers.

However, graduates of applied bachelor programs face a number of challenges upon graduation. In particular, graduates of college programs have no advantage when applying for further study and qualifications up to NQF level 6.

As applied bachelor programs are being introduced in Kazakhstan relatively recently, there is limited information available on the benefits of these programs for students and employers, their accessibility, and their role for career opportunities and lifelong learning.

In this regard, an evaluation study of applied bachelor's degrees programs in Kazakhstan was conducted among students who are in the process of taking these programs, graduates completed the programs, and employers involved in the learning process (e.g. contributed to the design of the educational program, provided internship placements) and have experience of employing applied bachelor's graduates. The participants of the field research included representatives of educational institutions - teachers, administrative staff. Therefore, the subject of the study is limited to the direct participants of applied bachelor programs.

Such a study, in our opinion, will give impetus and determine the right trajectory of further actions to explore applied bachelor's degree programs in Kazakhstan and make recommendations for further development. The study might be useful for countries that are also at the initial stage of introducing short-cycle educational programs to the education system.

### **Research Methods**

Research on the implementation of the applied bachelor's degree in Kazakhstan comprised two stages: analytical and empirical research.

Analytical research included a review of documents regulating applied bachelor's degree programs in Kazakhstan, analysis of secondary data (articles, presentations, methodological recommendations, etc.), research and analysis of international experience in implementing applied bachelor's degree programs, as well as analysis and synthesis, systematisation and comparison of scientific, educational and methodological literature on the research topic. These analyses helped us define characteristics of applied bachelor's degree programs worldwide and development stages of applied bachelor's degree program in Kazakhstan.

The next step was to conduct an empirical study to find out how applied bachelor's degree programs assessed by stakeholders: employers, students and graduates. Therefore, a case study was applied, which is considered a universally applicable research methodology for small-scale studies in education (Tight, 2003).

Applying case studies, it is important to identify the case itself, or the "bounded system" that is the object of the study (Creswell, 2012; Yin, 2014). It should be noted that case studies are difficult to generalise to other situations or contexts, which is a major drawback of research with this approach (Gall et al., 2007; Yin, 2014). However, the results and the findings of the study will contribute significantly to the further development of applied bachelor education in Kazakhstan. In addition, the case of Kazakhstan will be useful for other countries implementing this type of education.

Both quantitative and qualitative approaches were used to conduct the empirical study in order to gain a broader and more detailed understanding of the research subject (Johnson et al, 2007; Gläser-Zikuda, 2019), as well as to enhance validity of the data and its interpretation (Zohrabi, 2013). In addition, quantitative and qualitative methods of data collection and analysis were used simultaneously to ensure that the results complement each other and expand an understanding of a study phenomenon (Kuckartz, 2014). Therefore, a parallel mixed-methods design was utilised.

In order to specify the study subject, clarifying questions were used to identify what will be studied as an assessment of applied bachelor programs or its perception. Firstly, an extent to which the applied bachelor meets the needs of students, graduates and employers in the labor market to be understood. Secondly, it is necessary to find out what motivation and logic behind the choice of applied bachelor programs among students and graduates are. And thirdly, how the implementation of the applied bachelor is assessed by the stakeholders of the programs.

Qualitative (stakeholder interviews, field visits) and quantitative (survey) data collection methods were used to answer the above mentioned questions.

#### *Survey*

The purpose of a survey was to determine how the applied bachelor is perceived as a level of education by employers, students and graduates, and to what extent it meets their needs in the labor market, and what affected the choice of this program by students and graduates.

To collect data, two questionnaires were developed: one for the students and graduates of applied bachelor programs, and another one for the employers. The research questions were operationalize into indicators (motives and choice strategies, assessment of labor market integration, and level of satisfaction) that consisted of a set of variables (Morrison & Lawrence Manion, 2011) (Table 1).

**Table 1**  
*Indicators and variables for the survey*

<b>Indicators</b>	<b>Variables</b>	<b>Respondent group</b>
<b>Motives and choice strategies</b>	Social status prior to enrolling in an applied bachelor's degree program	Students and graduates
	The source of information on the program of applied bachelor's studies	
	The sequence of the choice of an applied bachelor's degree program, the rationality of the choice, the applied bachelor's degree as a target or alternative option	
	Factors influencing the choice: related field of study, external factors, motives, work experience	
<b>Labor market integration:</b>		Students, graduates and employers
<b>1.Labor market entry assessment</b>	Ease of employment, sufficiency of diploma as an entry level and qualification.	
<b>2.Assessment of the relevance of training to employers' requirements</b>	Matching employers' requirements: knowledge, skills, independence, work experience, soft skills.	
<b>3.Assessment of opportunities for advancement in profession</b>	Impact of an applied bachelor's degree program on promotion, salary level and its increase, continuing education.	
<b>Satisfaction level</b>	Assessment of the satisfaction level with the training placements, studies, compliance with expectations; education within an applied bachelor's degree program (employers).	Students, graduates and employers

Motivation and choice strategies were measured mainly through the construction of contingency tables with variables "social status before admission" and "type of desired educational institution before admission", the distribution of responses "motives for choice", contingency tables with variables "social status before admission" and "motives for choice".

Assessment of labor market integration was measured with a set of questions about how easy or difficult it would be to find a job with an applied bachelor's degree, to what extent the training in the applied bachelor's program meets the needs of employers, and whether there are prospects for professional and career advancement. The level of satisfaction was measured through questions assessing on a 4-level scale the degree of satisfaction with studies, internship places, and quality of training of applied bachelor graduates. Frequency distributions and contingency coefficients were conducted using these variables.

It should be noted that all groups of respondents were accessed through institutions providing applied bachelor's degree programs. The study was conducted as part of a research project funded by the Ministry of Science and Higher Education of the Republic of Kazakhstan, which enabled the research team's cooperation with universities and higher colleges.

The survey was conducted among three groups of respondents:

a) students of applied bachelor programs - full-time students in applied bachelor programs of higher colleges and pilot universities (anonymously);

b) graduates of applied bachelor programs - persons who have completed their studies and received an applied bachelor diploma from higher colleges (anonymously);

c) employers - representatives of enterprises, firms, institutions providing internship places for students of applied bachelor programs and/or employing an applied bachelor graduate (not anonymous).

The sample includes 624 students and 216 graduates of applied undergraduate programs, and 57 employers. Sampling was done with a non-probability convenient sampling method (Baur, 2019).

The survey was conducted using the Google Forms tool. Participants were informed about voluntary participation. Links to the survey in two languages (Kazakh and Russian) were sent to representatives of the administration of educational institutions. Representatives of educational institutions' administration sent survey links to their staff - teachers, group supervisors and departmental staff. The staff of educational institutions, in their turn, distributed links to the survey among students and graduates of applied bachelor programs and employers. The structural composition of the respondents - students, graduates and employers - in comparison with the available information on applied bachelor specialities, institutions and regions allows us to conclude that the sample includes the main socio-demographic groups of target (statistical) population.

The data were processed using Statistical Package for Social Sciences (SPSS) and analysed using descriptive statistics (Khalid et al., 2012) - frequency distributions, percentages and contingency tables. To determine the strength of association between variables, contingency coefficients were calculated for some contingency tables.

#### *Field study*

The field study included visits to 15 colleges providing applied bachelor programs in three regions of the country: Akmola, Karaganda, and Pavlodar, where industry is concentrated and there is a need for technical personnel. The colleges already implementing applied bachelor's degrees at the time of the study were selected for the visit.

Key participants included employers, representatives of student organizations, and representatives of educational institutions, totally 34 people (including 15 students and graduates, 9 representatives of university administrative staff and academic staff, and 10 employers). Data collection included group discussions and semi-structured interviews. Participants were selected in close cooperation with enterprises and educational institutions actively involved in the training and employment of graduates.

The purpose of the semi-structured interviews and the field visits was to collect qualitative data on motivation, perceptions and experiences of main stakeholders relating applied bachelor programs. While the survey was aimed at obtaining an assessment and measuring the level of satisfaction with the program, the field study was conducted to understand the perceptions, attitudes, and experiences of the participants.

Individual interviews with students and employers were between 15 and 25 minutes in length. This allowed sufficient coverage of key aspects while maintaining the attention and interest of the participants. The group discussions were between 30 and 45 minutes in length, allowing for a more in-depth and varied consideration of topics and issues.

All subjects gave their informed consent for voluntary inclusion in the study before they took part in the study. The interviews and discussions were recorded and transcribed and processed. Only the study organizers had access to the data.

All procedures carried out during the research complied with ethical standards and with the 1964 Declaration of Helsinki and its later amendments (2013).

Applied Bachelor's Degrees in the world and in Kazakhstan

First of all, in this article we analyzed the characteristics of applied bachelor degrees in the world and the peculiarities of its introduction in Kazakhstan.

In economically developed countries, the applied bachelor's degrees were introduced almost half a century ago, and as production became more complex in the 1970s, the need for high-skilled mid-level specialists increased. This trend was observed not only in high-tech industries and rapidly developing service sectors (tourism, consumer services, banking and finance, insurance, public transport, healthcare, social security), but also in traditional areas such as management, manufacturing, trade and construction.

Applied degrees focus on providing real-world experiences and incorporating job-related skills into the classroom. The degrees are mostly known as Bachelor of Applied Studies, Bachelor of Applied Sciences, or Bachelor of Science in Applied Studies. Internationally, the term 'short-cycle tertiary education' is used for all type of programs at level 5 ISCED. These programs are usually practically-based, occupationally specific and prepare students to enter the labour market, and typically (but not always) shorter than three years (ISCED 2011).

Applied degrees in Western European countries represent a system of higher non-academic education, implemented both in universities along with academic degree programs and in special vocational education institutions. In order to implement these programs, some countries created special educational institutions of a new type, where theoretical courses were closely related to the development of professional skills (Chugunov, 2010).

In some European countries, specialized educational institutions have been established to implement applied bachelor's degree programs. In Finland, 250 secondary vocational education institutions were reformed and reorganized by merging into polytechnics in order to implement applied bachelor's degree programs. In 1991, a pilot project was launched to create 22 temporary polytechnics from vocational education institutions, which led to the dissolution of the secondary vocational education system and the successful completion of the experiment in 1996. In France, applied or vocational baccalaureate programs are implemented in secondary vocational education institutions - lycées. In Great Britain applied bachelor's degree can be obtained through the system of vocational education (Further education), which combines schools, colleges, training centers, institutes at the production units and employment centers. In Germany, universities of applied sciences – Fachschulen - are specialized educational institutions for further vocational education. The diplomas are equivalent to Master's and Bachelor's degrees (Kennedy, 1996).

The Paris Communiqué of the EHEA Conference of Ministers of Education conceptualizes short cycles as stand-alone higher education qualifications with a dual purpose - preparation for the labour market and further study in higher education institutions (at the first cycle). A short cycle within the first cycle refers to qualifications typically comprising or represented by approximately 120 ECTS credits - in a national context. However, the organization and recognition of short-cycle qualifications within the first cycle of higher education remains voluntary. Each country can decide whether and how to integrate short-cycle qualifications into its national qualifications framework (Paris Communiqué, 2018).

In Kazakhstan, the need to introduce applied bachelor's degree programs at the higher education level was due, firstly, to the increased requirements of employers to employees: the labor market requires new skills that correspond to dynamically developing technologies, including basic knowledge (natural science), practice-oriented (technical and technological) professional competencies, and the ability to adapt quickly to new methods of production. Secondly, if only technical skills were required of middle-level specialists previously, today, it is necessary to have a certain theoretical basis. Step-by-step, the training of specialists in TVET organizations began to approach the level of higher education (OECD, 2014).

In this regard, in 2015, new definitions of "applied bachelor's degree" and "applied bachelor" were fixed in the Law of the Republic of Kazakhstan "On Education," which provide

for qualifications awarded to persons who have completed post-secondary educational programs that combine the advantages of higher education, and technical and vocational education programs.

Today, applied bachelor programs in Kazakhstan are divided into two types: the first type is implemented in technical and vocational education organizations (TVEOs) as post-secondary non-university programs; the second type is programs implemented in universities as the lowest level of higher education. In the Bologna system, the latter type is called short cycle of higher education.

It should be noted that the qualifications obtained after mastering both types of applied bachelor programs belong to level 5 of the National Qualifications Framework (Table 2).

**Table 2**

*National Qualifications Framework of the Republic of Kazakhstan, Levels 3-6*

<b>Level</b>	<b>Ways to achieve</b>
<b>3</b>	Basic secondary education and technical and vocational education (advanced level), or general secondary education and practical experience and/or vocational training (courses on the basis of the organization of education for programs of 6 vocational training up to one year or training at the enterprise)
<b>4</b>	General secondary education and technical and vocational education (mid-level specialist), general secondary education and practical experience
<b>5</b>	Post-secondary education (applied bachelor's degree), practical experience; at least two years of bachelor's degree or three years of mastering special higher education programs, practical experience
<b>6</b>	Higher education. Bachelor's degree, specialty, residency and practical experience

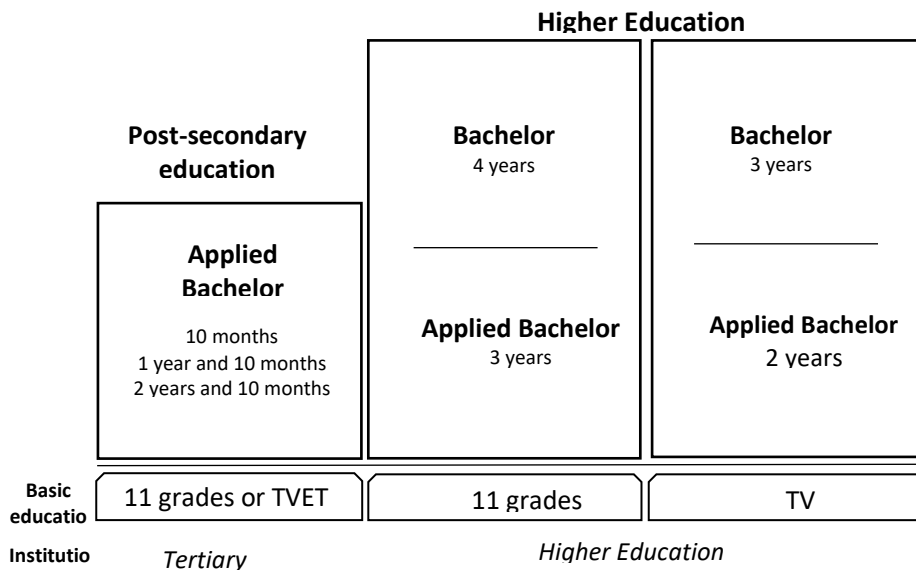
Educational programs have been designed to train highly qualified technicians, primary school teachers, preschool teachers, office workers, qualified nurses, etc. The basis was the integrated professional programs of universities and colleges, providing serious theoretical training and imparting practical skills in production according to the requirements of the industry qualifications framework and professional standards.

As experiment, applied bachelor's degree programs started in colleges of Kazakhstan in 2018, while educational institutions were awarded the status of "tertiary colleges." Currently, educational programs of the applied bachelor's degree have been implemented in 43 tertiary colleges in Kazakhstan. Depending on the basic level of education at entry, an applied bachelor's degree can take from 10 months to 2 years and 10 months to complete (Figure 1).

From 2022, applied bachelor's degree programs are also being piloted in 8 universities. As these programs are pilot programs, the graduate programs have not yet been implemented in the universities. Nevertheless, it is expected that graduates with an applied bachelor's degree will belong to the lowest level of higher education and will have the opportunity to continue their studies further to the level 6 NQF.

**Figure 1**

*Procedure for obtaining an Applied Bachelor's degree*



The introduction of applied bachelor's degree educational programs served as an additional incentive to attract young people to TVET organizations, with shorter training periods and lower costs, as well as a narrow practical focus. However, applied bachelor's degree program graduates face a number of problems after completing their studies.

First, applied bachelors are currently have been equated to middle-level specialists (technicians and technologists). Second, applied bachelors have no advantage in continuing their studies at higher educational institutions and accepted for the second year of studies, as middle-level specialists are. Thirdly, the analysis of sources showed that at the moment there is no comprehensive study on the state of implementation of these programs and there is a lack of knowledge about the perception of applied bachelor degree by the main stakeholders - employers, educational institutions, as well as students and graduates of applies bachelor degrees.

Kazakh researchers note that for the full implementation of applied bachelor's degree programs and their successful functioning, it is necessary to introduce and approve regulatory laws that ensure its effective legal functioning (Zhumasheva, 2022; Kulumzhanova, 2023). At the same time, researchers note the difficulty in the process of establishing effective communication between stakeholders (Ibadildin, 2022).

Matveeva (2018) notes that the attractiveness of applied bachelor's degree programs for Kazakhstani students is due to the possibility of profitable employment upon graduation.

Researchers have studied the advantages and features of these programs. Applied bachelor degrees allow students to be better prepared for work and careers with a combination of theoretical knowledge and practical skills (Cremonini, 2010; Finley, 2021; Kisker et al., 2013). Applied Bachelor programs are often developed in collaboration with employers and industry partners to ensure that the curriculum is aligned with industry needs. Work-based learning is a key component of Applied Bachelor programs, with students often spending a significant amount of time in the workplace, for example through internships and work placements.

An applied bachelor's degree aims to prepare students for a specific career rather than a general education. This makes this degree highly attractive to employers as it ensures that



graduates have the skills and knowledge necessary to succeed at the workplace (Cohen & Brawer, 2014).

Research on short-cycle programs in EHEA countries has shown that these programs can improve employability while promoting flexible learning pathways (Magda Kirsch & Yves Beernaert, 2011). Short-cycle higher education programs, which are shorter and more practical than undergraduate programs, are uniquely suited for staff development and retraining, a particular need in response to the COVID-19 pandemic (Dinarte-Diaz, 2022).

Thus, short-cycle programs can be a valuable workforce development tool in the modern era when people may change occupations or careers several times during their lives and need training that is fast, effective, and closely aligned with the labor market.

## Results

### Students

As part of our research on stakeholder perception of applied bachelor programs, we conducted a survey among students. The sample size was 624 students of applied bachelor degrees programs from 23 higher colleges and 8 universities. The following formula was used to calculate the minimum required sample size (Siripipatthanakul et al., 2023):

$$[z^2 * p (1 - p)] / e^2,$$

where  $z = 1.96$  for a confidence level of 95% according to the normal distribution table;  $p = 0.5$  (typically 0.5 for the desired proportion of the trait in the general population) and  $e = 0.05$ , for a sampling error of 5%.

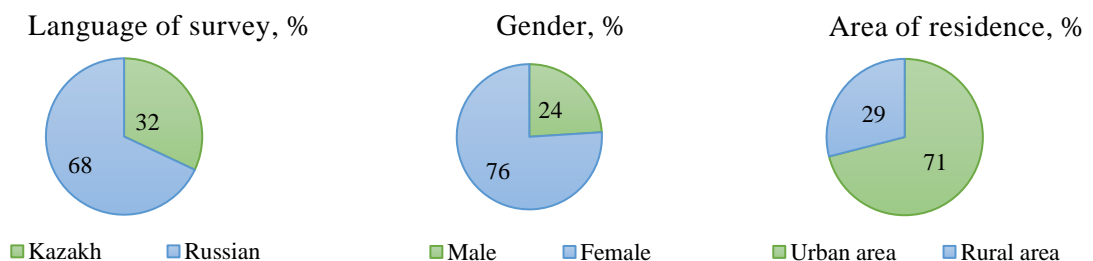
The sample population calculated using this formula was 384.16. The number of students interviewed exceeded the minimum required sample size for an unknown general population.

The questionnaire consisted of 40 questions: 8 - on socio-demographic portrait (gender, age, ethnicity, marital status, health limitations, place of residence, income level, region of residence); 6 – on compliance with the target group (educational institution, specialty, year of study, program duration, type of study); 26 - on the subject of the questionnaire. The questions on the subject of the study concerned the motives for choosing an applied bachelor's degree program for study, peculiarities of entering the labor market, satisfaction with the education received, etc. The questionnaire was applied to both students and graduates of applied bachelor programs.

Of the 624 survey participants, two-thirds preferred Russian as a survey language, the gender ratio is dominated by women (76%), and 71% come from urban areas (Figure 2).

**Figure 2**

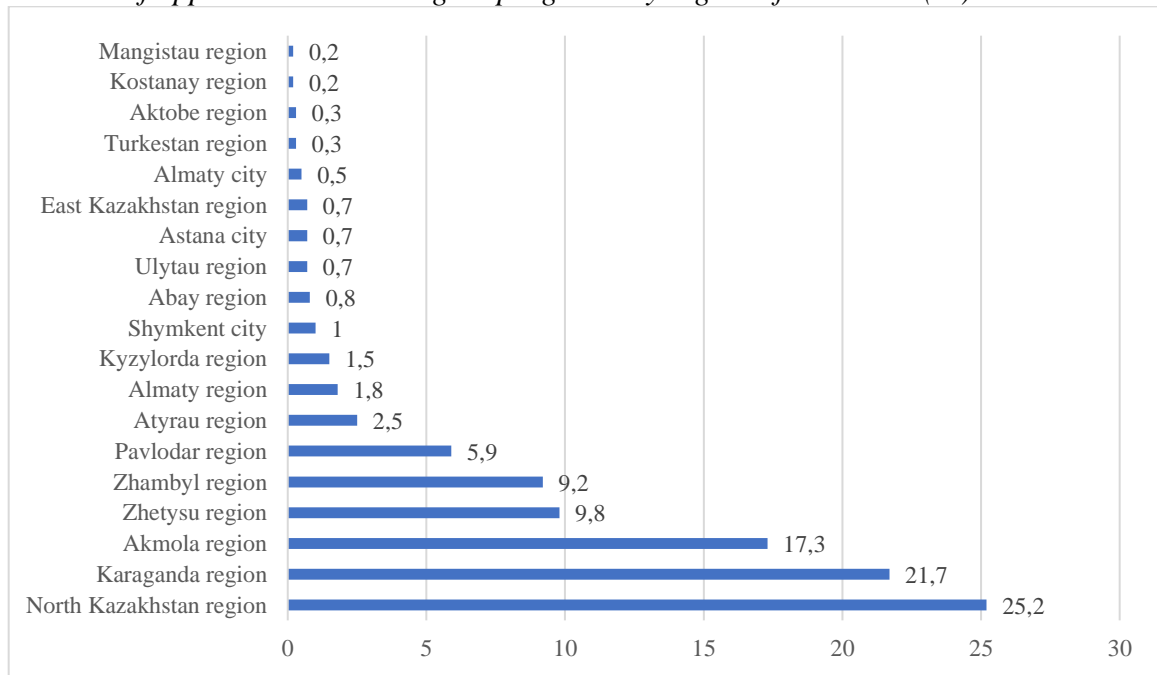
*Surveyed students by survey language, gender and area of residence*



More than two-thirds of applied bachelor's degree students who participated in the survey represent the northern and central regions of Kazakhstan: North-Kazakhstan region (25%), Karaganda region (22%) and Akmola region (17%). This is due to the fact that applied bachelor's degree programs were first introduced and became most widespread in these regions (Figure 3).

**Figure 3**

*Students of applied bachelor's degree programs by region of residence (%)*



The results of the study showed that the motives and strategy for choosing a program of study are related to the status and context at the time of choice. The close environment of the student - family, friends and teachers at school or college - has a great influence on the choice of study program. The admission committee of an educational institution can play an important role in the decision to enroll, especially for individuals who wish to enter the labor market or formalize their employment (Table 3).

**Table 3**

*Motives for choosing an applied bachelor's degree program (%)*

Why did you choose an applied bachelor's degree program to apply to a college (or university)?	%
On the advice of parents, friends	23
I want to graduate in a short time and start working	17
I didn't get education grant, and I can complete applied bachelor's degree more quickly	13
I didn't mind where to study, it was important for me just to get an education	13
I didn't get education grant at the university, and tuition fee is much cheaper at applied bachelor's degree	7
I didn't get where I wanted to	5
On the advice of the admissions committee	4
On the advice of the employer	4
There was no other choice	3
Other	2
I didn't choose an applied bachelor's degree, but apply for it as my friend/friends did	1
On the advice of bloggers and media	1

Two-thirds of respondents answered that an applied bachelor's degree was the first choice of education. However, one in five students (20%) did not consider the program as their first educational option, but chose it because of shorter study period than at the academic bachelor degree, lower cost of education and the possibility to enter the labor market immediately after graduation, which emphasizes the advantages of these programs.

School graduates often choose an applied bachelor's degree due to the fact that they have not entered the desired program of study (usually a grant at a university). For them, the applied bachelor's degree is an alternative option for obtaining profession. Those who were serving in the army at the time, working on temporary wages, unemployed, looking for a job, being on maternity leave considered an applied bachelor's degree as their desired education. Therefore, for socially vulnerable groups of students, enrollment in an applied bachelor's degree is seen as an opportunity to obtain a professional qualification for entering the labor market and gaining a stable status.

Nearly 45% of survey participants indicated that an applied bachelor's degree programs at college are more suitable for their professional goals than a degree from a regular college or university program. It should be noted that among the other response options was, "I didn't know there was an applied bachelor's degree diploma." Given the low proportion of students who learned about the applied bachelor degree program through advertising (7%) or the Internet (9%), we can assume an insufficient effort to disseminate information about the opportunities to obtain education in the applied bachelor degree program.

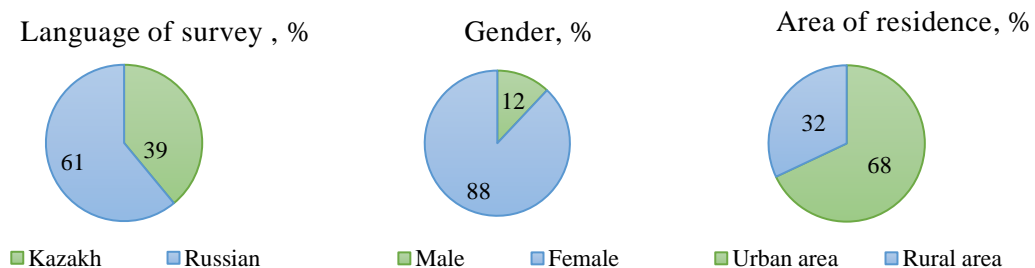
Lack of awareness of applied bachelor programs is also relevant issue among employers. For example, Employer #2 suggests: "...to regulate by law the communication between universities and colleges and between employers and graduates of applied bachelor degree program. Some employers do not know or have not heard what an applied bachelor degree program is, and approach this program with cautious attitude."

#### Graduates

In total, 216 graduates of applied bachelor's degree programs from 19 colleges participated in the survey. Two-thirds of the participating graduates preferred Russian for the survey, the gender ratio is dominated by women (76%), and more than 68% of the respondents come from urban areas (Figure 4).

**Figure 4**

*Graduates by survey language, gender and area of residence*

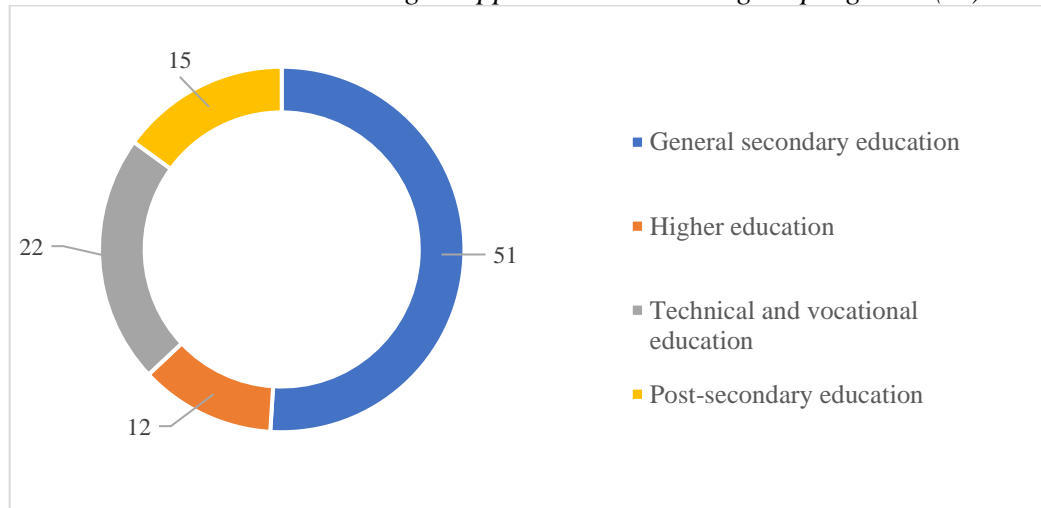


Almost two-thirds of the surveyed graduates of applied bachelor programs represent two regions - Akmola (36%) and Karaganda (27%) - the regions of the first applied bachelor programs in the country.

An applied bachelor's degree was the first option of desired education for 71% of surveyed graduates. Applied Bachelor's program became the second or alternative option for 18% of graduates. Most often, an applied bachelor's degree became an alternative option for those graduates who were in school prior to enrollment. Graduates who were already employed prior to enrollment, chose an applied bachelor's degree to obtain a professional qualification shortly.

**Figure 5**

*Basic education when admitting to applied bachelor's degree programs (%)*



More than half (51%) of the surveyed graduates entered applied bachelor's degree programs on the basis of general secondary education, while 12% entered on the basis of higher education. About 37% of applied bachelor's graduates entered on the basis of technical and vocational education (22%) and post-secondary education (15%) (Figure 5).

At the same time, respondents with technical and vocational education are more likely to choose applied bachelor's degree programs in a related field of study than those with post-secondary and higher education. Among the surveyed graduates enrolled on the basis of vocational education (TVET, post-secondary and tertiary), 83% indicated that they attended an applied bachelor in a field of study related to their previous education (Table 4). Therefore, graduates enrolled on the basis of technical and vocational education had the opportunity to increase the value of their qualification in a related specialty and improve their competitiveness at labor market.

**Table 4**

*Applied bachelor's degree specialties (%)*

Is the applied bachelor's degree major you graduated related to major from your previous education?	Based on TVET	Based on post-secondary education	Based on higher education
Yes	83%	63%	69%
No	4%	16%	19%
Not relevant, I don't have a previous post-secondary, TVET or tertiary degree	13%	22%	12%

Interviews with graduates of applied bachelor's degree programs revealed a desire to continue their studies, including enrolling in master's degree programs. For example, when interview participant #1 was asked, "What are your plans?" they answered "I plan to study for a master's degree in the future and continue to climb the career ladder." Participant #2 plans to continue their path in the same field and enroll in higher education. Thus, graduates of applied

bachelor's degree programs view their education as a starting point for further professional development and career advancement. This aspect emphasizes the importance of developing not only a mechanism for transition from NQF Level 5 to Level 6, but also the prospects for transition to Level 7.

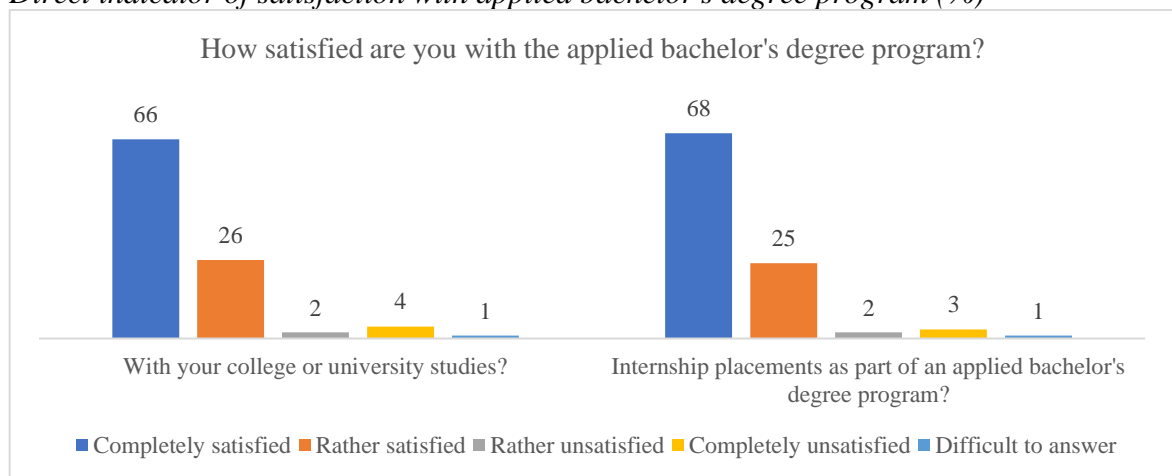
The demand for graduates of applied bachelor's degree was confirmed by the results of the questions concerning employment. About 40% of surveyed graduates found a job in less than a month after graduation. Another 18% of surveyed graduates responded that they spent 1 to 3 months looking for a job. Almost 7% of graduates looked for a job after completing an applied bachelor's degree program for 3 to 6 months.

One third of the survey participants already knew during their studies where they would go to work, of which the majority chose a place of work during their internship (20%). About 30% of surveyed graduates of applied bachelor's degree chose a place of work and specialty before starting their studies. Among other responses, it was common that survey participants were already working before enrollment or during their studies. Nearly 71% of graduates indicated that an applied bachelor degree was more suitable for their goals than a regular college degree.

Graduates of applied bachelor's programs evaluated the compliance of their training level with the requirements of employers highly (> 80%). However, this high level of satisfaction with their studies was not confirmed by the indirect indicators of satisfaction (Figures 6,7).

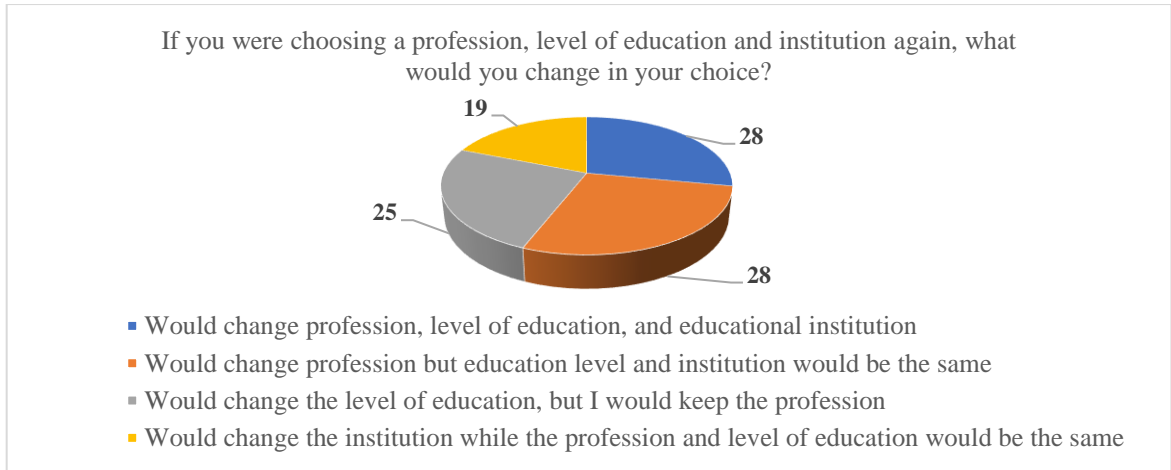
**Figure 6**

*Direct indicator of satisfaction with applied bachelor's degree program (%)*



**Figure 7**

*Indirect indicator of satisfaction with applied bachelor's degree program (%)*



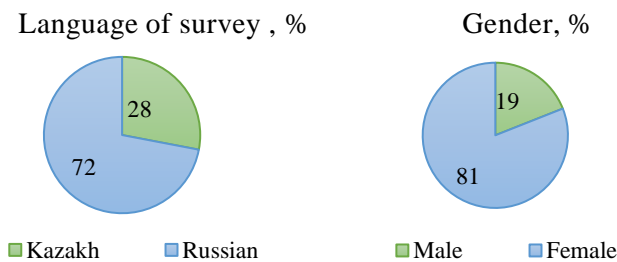
Graduates were asked that if they could choose a profession, level of education and educational institution again, what they would change in their choice. The answers received demonstrate that only 47% of surveyed graduates are satisfied with the level of education, i.e. applied bachelor's degree in college (the sum of answers where the level of education would remain the same).

*Employers*

A total of 57 employers participated in the survey. Kazakh language was preferred by 28% of employers to participate in the survey, 72% optioned to Russian. Among representatives of employers 81% are women, 19% are men (Figure 8).

**Figure 8**

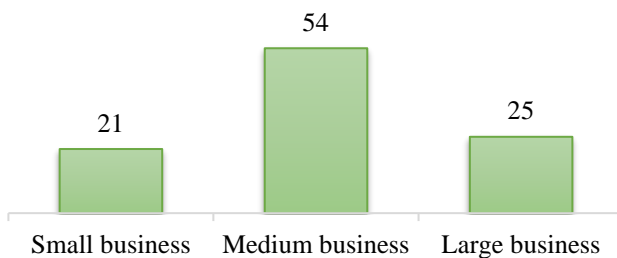
*Employers by survey language, gender and area of residence (%)*



The main type of cooperation between employers and educational institutions is providing places for students' internship - 75% of employers. Among the respondents-employers the most common was medium-sized business - 54% (Figure 9).

**Figure 9**

*Employers surveyed by type of business, %*



In terms of industries, the education sector prevails - more than half of the employers who participated in the survey. Next comes the sphere of health care and social services (25%).

The third place is occupied by the sphere of information and communication with 5% of employers.

It is worth noting that 75% of the surveyed employers provide internship places for students within the framework of cooperation with educational institutions, making the foundation for future employment of graduates.

Almost two thirds of employers believe that an applied bachelor's degree is enough to be employed by their organization. Therefore, this level of training is able to cover the demands of the labor market. Employers highly appreciated the applied bachelor degree programs. More than half of the employers believe that graduates' level of preparation for these programs meets their requirements. During interview when asked "In your opinion, is there a difference between graduates of TVET and applied bachelor degree?", one of the employers noted that the students who received education of applied bachelor degree have more work experience compared to the others, as they have theory and practice 40% to 60% respectively.

We consider it important that for 79% of respondents to some extent work experience in the specialty is crucial when hiring college and university graduates. This emphasizes the relevance of the practical components of the program and the possibility of internships and work placements with employers during training.

As for the benefits of an applied bachelor's degree for career growth, 26% of surveyed employers definitely consider an applied bachelor's degree when deciding on an employee's career development. Another 46% of respondents said that having an applied bachelor's degree is more likely to be considered. Cumulatively, a quarter of employers indicated to some degree that having an applied bachelor's degree does not affect an employee's career advancement.

When assigning a certain salary level to an employee, an applied bachelor's degree is clearly considered by 23% of the employers participated in the survey. Therefore, an applied bachelor's degree can positively impact the employers' decision on an employee's career advancement and partly on the setting of salary levels.

Employers, for whom having an applied bachelor's degree was relevant, were quite positive about the potential of these programs. In an interview with the question, "Do you, as an employer, need employees with an applied bachelor's degree?" Employer #1 responded, "Yes, they can get an applied bachelor's degree. So, they can work and study an applied bachelor's degree program part time accordingly."

Employer #2: "Even if students have a morning work shift, they can work with children for another 3-4 hours in the afternoon, combining this with their studies. They demonstrate their ability to combine study, work and practice." The possibility to work and improve qualifications the same time contributes significantly to the realization of the concept of lifelong learning and increases the flexibility of specialists in the labor market.

### **Discussion**

An applied bachelor's degree provides students with practical skills and knowledge that can be applied in real life and work. According to students, graduates, and employers, applied bachelor's programs allow for successful entry and integration into the labor market, and meeting employers' requirements.

In addition, the applied bachelor's degree has several advantages that make the program more attractive and provide open access to education for socially vulnerable groups of students (part-time workers; students who just finished military reserve; students on maternity leave, etc.). The data shows that applied bachelor's degree programs were also chosen for secondary professions and advanced training. These programs are distinguished by their short duration, strong practical orientation, and reduced cost compared to academic bachelor's degree programs.

The advantages of the applied bachelor's programs are relevant to the implementation of lifelong learning concepts. Since they focus on the needs of the labor market, they are a convenient opportunity for professionals to improve their qualifications. These programs are also effectively used for adult education and retraining, which is important for the present demographics (Slantcheva-Durst, 2014).

The applied bachelor's degree can also be an optimal option for individuals with a non-classical educational pathway with long interruptions in education or change of profession and for those who have gained access to higher education through recognition of their professional qualifications (professional experience and specialized secondary education).

However, there is a major problem associated with the transition from the National NQF Level 5 to Level 6 in higher education. Graduates of applied bachelor's degree programs have no advantage in continuing their studies in higher education and are accepted in the second year of study, similar to mid-level specialists.

In this regard, students enrolled in the applied bachelor's degree program in the TVET system did not see the possibility of further study in higher education (dead-end learning paths). This is fraught with subsequent frustration and problems with sustainable integration in the labor market.

In addition, it is possible that the providers of applied bachelor programs do not conduct informational work effectively enough because the main channel for disseminating information about applied bachelor programs is informal connections such as family, friends, and acquaintances.

There is also an aspect related to the indirect indicator of graduates' satisfaction with applied bachelor's programs. Perhaps applied bachelor programs do not sufficiently meet the expectations of the labor market, which leads graduates to the idea that they made the wrong choice of training programs; perhaps the problem is the low status of some working professions in Kazakhstan. This issue requires a more in-depth study and analysis of applied bachelor's degree programs and the overall situation of working professionals in the country.

### **Conclusion**

As mentioned previously, there is a significant shortage of skilled engineers, technicians, and mid-level managers in the production sector. Despite the increasing number of facilities being constructed in the country, the lack of technical specialists necessitates the recruitment of foreign labor (Seilkhanov, 2022). To mitigate this issue and reduce dependence on foreign workers, we propose the following strategies to enhance the applied bachelor's degree program in Kazakhstan, considering the current nascent state of this program:

Ministry of Science and Higher Education of the Republic of Kazakhstan: To raise public awareness, it is necessary to systematically collect, analyze and disseminate information on applied bachelor's degrees, including information on the average earnings of graduates and employment rates. A thorough research is also needed to assess the relevance of the educational programs offered by higher education institutions to the actual needs of the labor market.

Ministry of Labor and Social Protection of Population of the Republic of Kazakhstan: To conduct longitudinal studies that track graduates' progress and professional development over time. It is necessary to investigate the employment of graduates of applied bachelor programs and their career development, employment and salary levels.

Industry associations and the National Chamber of Entrepreneurs "Atameken": Employer participation in the design and delivery of applied bachelor's degree programs should be encouraged at all stages, from program development to graduate employment.

Educational institutions: Implementation of a flexible lifelong learning approach: Embracing a flexible educational approach that encourages individuals to acquire skills through



lifelong learning modules. This concept promotes the idea of continuous skill accumulation throughout one's career, enabling individuals to adapt to evolving industrial demands.

Interdepartmental Collaboration for NQF Enhancement: The synchronization phase should focus on building bridges between the short-cycle programs of 5th level and the 6th level NQF to allow for transition and higher degrees in the future. Collaboration of key stakeholders within an interdepartmental working group is crucial to update the NQF to align with international standards as the European Qualifications Framework. Such alignment, especially at level 5 NQF, will facilitate the recognition and comparability of qualifications, strengthening the credibility and value of applied bachelor's degrees in the labor market.

Overall, the successful implementation of these proposed solutions can alleviate the shortage of skilled professionals in Kazakhstan production sector, reduce reliance on foreign labor, and fostering a self-sustaining workforce that meets the industry's demands.

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