Comparative Analysis of the Process of Training Education Managers in Educational Institutions

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Abstract

Context: A significant part of future specialists receive only practical skills without formal practical exam situation. In this regard, there is a need to train a manager who can adapt and be ready to carry out his/her activities in a specific profile interaction. The aim of the experimental study was to develop and test the advanced working hypothesis about the possibility of effective formation of readiness for future self-realisation of future education managers.

Approach: The work uses mathematical methods for testing the hypothesis of testing the readiness of education managers with verification of competency type.

Findings: The novelty of the study is determined by what the authors are considering "the possibility of training a manager in accordance" including not only the standards for the provision of educational services to the population, but also the possibility of introducing world-class training standards. The authors show that the basis for such a development may be the readiness to work in a globalised environment. The dynamics of changes in the indicators of the levels of readiness for professional self-realization of students studying in the control and experimental groups from the first to the fourth year were compiled and recorded. The methodology of vocational training of students for the purpose of their self-

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realisation during training has been specified. The practical significance of the study is determined by the fact that integration with the global educational environment should be based on international standards for the provision of educational services.

Conclusions: The results of this research can be useful and interesting to international readers, as the parameters of educational and methodological support have been developed and tested, which contains a set of situational exercises to form readiness for professional self-realisation for future education managers. Also, the conducted analysis indicated serious problems with the employment of university graduates both in the Republic of Kazakhstan and in the Republic of Lithuania.

Keywords: Education, Higher School Management, Educational Policy, Educational Technology, Strategy, Vocational Education and Training, VET

1 Introduction

The formation of educational and scientific space is determined by world political and economic structures. The most important are the requirements for the training of qualified specialists in all fields of activity, in particular, in education (Kim & Lee, 2019; Chen et al., 2019; Urbani, 2020). An important task is to produce a specialist who will have such competencies as: The ability to make decisions in standard and non-standard situations and be responsible for them, search for and use the information that is necessary for the effective performance of professional tasks, use information and communication technologies, work in a team, navigate the processes of technology development in professional activities, engage in self-education and constantly improve their skills. The high dynamism of the modern business world, continuous and significant changes in technologies in the labour market and sales, the formation of a single information space, the growing need for specialists in the economic profile affect the nature of the requirements for the quality of modern education (Nalivayko & Granina, 2019).

Of particular relevance in market conditions is the problem of training professional personnel for the educational sphere, since significant transformations in all structures of society and the general democratisation of life results in a reduction in the time needed for graduates to adapt to work and increase their mobility and competitiveness (McDonald, 2000). In modern society, the level of professional training of a student is the main potential for professional growth, therefore, a future specialist must skilfully use the accumulated knowledge (Altinay et al., 2017). The quality of education is a necessary component of the life of a modern person, with intelligence and education, breadth and flexibility of professional training, the desire for creativity and the ability to solve non-standard tasks (Guntzburger et al., 2017; Shtyfurak & Shtyfurak, 2018). The task of modern universities is to educate a per-

son who can integrate into reality, which is constantly changing, overcome difficulties and achieve success (Basari & Altinay, 2018). Modern universities brought a new dynamism to higher education to the benefit of students, staff and society. Higher education is faced with the task of creating the conditions for students' self-realisation, developing their individuality and creative potential, and ensuring the development of a professional and personal culture of a specialist. The professional culture of a specialist is a combination of special knowledge and experience of their implementation in professional activities. Special requirements are now being set for the training of specialists in the field of management – managers, as the most active subjects of a market economy (Morozova et al., 2016), who are able to actively to the current conditions, leaders with strategic thinking and professional image.

2   Literature Review

A young specialist, an education manager who is equipped with basic knowledge after graduation, requires a lot of time in order not only to be ready for professional self-realisation, but also to adapt to the conditions of professional activity in a particular place (Kusainov, 2017). The existing system of vocational training for students receiving a speciality in higher education institutions pays the greatest attention to vocational training, where knowledge, abilities and students' high level of skills are necessary to receive skills in general, which is not correct since any higher education institution should offer basic skills to students and not expect them to already have the skills/knowledge, while a young specialist in the process of labour activity faces except for professional problems (the level of his knowledge, skills), problems of a psychological and social nature (Macheridis, 2018; Liubaretz, 2019).

The preparation of the future education manager for professional self-realisation should be based on the processes of transformation and adaptation to international requirements and national expectations, in the context of the transformation of the entire education system (Wei & Liu, 2015). From the need to bring schools that train managers to the standards of international managerial education, it follows that managerial training should be based on programs that take into account common problems of the economy and the organisations operating in it, to prepare future specialists for professional activities in the domestic and international labour markets, to form a readiness for professional self-realisation in the future activities of an education manager.

The phenomenon of readiness for professional self-realisation is considered in the mainstream of each of the professional fields of activity of a specialist. Readiness for professional activity is a kind of "response" to the totality of professionally determined requirements for a personality of an education manager (Davies, 1992). At the beginning of the last century, the problem of readiness became an important object of scientific research. Scientists

developed aspects of the theory of attitude. This phenomenon has been studied by scientists in connection human mental processes (Teichler, 1995).

Professional self-realisation is an active process, therefore, in the study of the preparation of the future education manager for professional self-realisation, we analysed the concept of "psychological readiness for activity", which was introduced in 1976, in studies on engineering psychology and labour psychology (Kuoppakangas et al., 2019). Scientists highlight the psychological component of professional readiness, which plays an important role in mastering a profession (O'Donoghue & Heanue, 2018). This understanding has become an important argument for using the concept of readiness as a result of preparing a specialist for professional self-realisation (Agasisti, 2017; Tovkanets, 2019).

The problem of the student's readiness for professional self-realisation remains one of the urgent in modern psychology and pedagogy, and is a component of professional readiness for professional activity (Alstete, 2006). An analysis of existing approaches shows that readiness is studied as a certain state of consciousness, psyche, functional systems in a situation of responsible actions (Degn, 2015). Readiness is expressed as an opportunity, the ability of a subject to act at a fairly high level, the decisive condition for quick adaptation to working conditions, further professional development and professional self-realisation (Teehankee, 2018; Pryshlyak, 2018).

Professional readiness is a subjective state of a person who is considered capable and prepared to carry out a certain professional activity and striving to perform it at a high level with the goal of self-realisation (Haines, 1973). Professional readiness is closely connected with such a concept as professionalism in the field of economic activity (Riad Shams & Belyaeva, 2019). In this situation, the lack of prestige of knowledge, education and the lack of professional training of future specialists in Republic of Lithuania and the Republic of Kazakhstan for professional self-realisation in all spheres of activity is of special urgency and significance (Al-Zawahreh et al., 2019). The development of the problem of the formation of a value relation to professionalism has social (forms professionalism as a moral value, value relations in all areas of human activity) and scientific (serves as a means of knowing the intellectual and professional capabilities of people) significance.

3   Materials and Methods

The organisational scheme of the experimental study provided for the sequential implementation of three stages: Ascertaining, formative, and final. During the formative stage of the experiment, the following problems were solved:

– Development and testing of educational and methodological support, which contains authentic materials and a set of exercises for the formation of future managers of education readiness for professional self-realisation;

– The methodology of vocational training of students with the aim of their self-realisation during training was specified;

– Certain pedagogical conditions and a model for the formation of professional self-realisation of future education managers were implemented.

The organisation of the formative stage of the experimental study provided for the implementation of certain pedagogical conditions that contributed to the preparation of the future education manager for professional activity. In the process of organising the experiment on the formation of the readiness of future education managers for professional self-realisation, we proceeded from that the studied process of forming the professional quality of a personality will significantly improve when the selected and justified pedagogical conditions are introduced into the educational process.

Therefore, the aim of the experimental study was to develop and test the advanced working hypothesis about the possibility of effective formation of readiness for future self-realisation of future education managers. It was also revealed that the pedagogical experiment in our study is a multicomponent hierarchically organised system process, the basis of which is the study of the disciplines "Management in education", "Fundamentals of psychological and pedagogical management", "Quality management of education at school", "Administration of work in school", "Management of the content of education", "Economics and finance in educational institutions".

In the pedagogical experiment, 3 stages were clearly defined:

– Preparatory (selection of training materials, definition of tasks, preparation of tests to determine the levels of formation of readiness for professional self-realisation);

– Main (experiment);

– Final (processing of the obtained results, their interpretation, preparation of methodological recommendations and their introduction into teaching practice at the faculty of international business and management of an economic university).

The formative stage of the experiment was carried out in stages on the basis of the Al-Farabi Kazakh National University during the 2017-2019 school year. For the experiment, control and experimental groups of students with approximately the same composition and initial level of knowledge of the majors were selected. In total, 216 students of 1-4 years of Al-Farabi Kazakh National University, who studied in the second year (216 students) and in the fourth year (186 students).

Students were divided into control (CG) and experimental (EG) groups as follows: In the second semester of the 2016-2017 school year, four experimental groups (104 students) and four control groups (112 students) who studied in the first year were identified. In the 2017-2018 academic year, these same students studied already in the second year, but their number decreased and amounted to 100 students in the experimental group and 105 students in the control groups. In the 2018-2019 academic year, students of the EG, who were already 95 people, and control groups (98 students) studied in the third year. The final stage of the experimental study took place in the first semester of the 2019-2020 academic year with students already in the fourth year. There were 92 students in the experimental groups and 94 students in the control groups.

In educational institutions of the Republic of Lithuania, the education manager is defined as specialisation in the same way as in Kazakh University where this direction acts only as a discipline of a separate direction and part of a varied retraining cycle. In this regard, the training program is considered as part of the specialisation in universities of the Republic of Lithuania. Due to the fact that these training levels are not comparable and cannot be studied in comparable parameters, the efficiency of employment is considered as an indicator of the resulting type.

4   Results and Discussion

We determined the control group (CG) and experimental group (EG) according to the input levels of students' readiness for professional self-realisation, which had approximately the same values in the CG and the EG. This makes it possible to obtain reliable research results in traditional and experimental conditions for the formation of future professional education managers. In the experimental groups, students studied using innovative technology. In these groups, the preparation of the future education manager for professional self-realisation was carried out. An experimental methodology was applied using authentic materials of a professionally significant nature, role-playing games and a set of exercises aimed at developing the skills necessary for professional communication, which is especially important for future education managers. In the control groups, training was carried out according to traditional methods, that is, according to work programs.

In the process of research in the experimental and control groups, the classes were held by the same teachers in each academic discipline, which ensured the uniformity of requirements for the participants in the experiment, and also made it possible to purposefully control the educational process. Other teachers (with pedagogical experience from 5 to 20 years) in the role of competent mentors were also involved in the experiment, which contributed to the objectivity of assessing knowledge, formed skills and abilities of students. During the formative stage of the pedagogical experiment, educational and methodological material and

various types of educational activities provided for the Pedagogy and Psychology program for students of 2-4 years and "pedagogical specialties" for second-year students were used. Since an experimental study was conducted among students from the second to the fourth year, therefore, the main attention was paid to the methodological support of the speciality "Pedagogy and Psychology" for the preparation of students.

To conduct the formative stage of the experiment, authentic materials of a professionally significant nature were selected, on the basis of which complexes of classes from practical courses were developed. The use of such training complexes contributed to the formation of readiness for professional self-realisation among future education managers. Pre-experimental and post-experimental tests were used. With the help of tests, we evaluated the strength of students' assimilation of knowledge, understanding of the possibilities of their application in professional activities. We adhered to the opinion of those scientists who believe that the content and types of tests should be the same both in the beginning and at the final stage of the experiment. Only in this case it was possible to objectively compare the results. Test assignments were offered in hard copy and performed by each student separately on distribution cards. Before testing in each experimental group, students were given oral instructions. With the help of testing, the level of knowledge of future education managers was verified and the following were established:

– Knowledge of management in education;

– Knowledge of professionally guided pedagogy of terminology;

– The ability to compose dialogues of professional communication;

– Ability to write a message, resume, business letter;

– Skills and ability to negotiate professional areas.

Given the fact that the level of assimilation of educational material is an indicator of the cognitive activity of future specialists, in order to improve the quality of assimilation, it is necessary, first of all, to direct work of students to use the knowledge that they already know in practice. So, students can realise the need to acquire new knowledge. For this, three cross-sections of knowledge were carried out. The first was carried out after the first course of study – before stage 2. Its purpose was to establish the degree of formedness of the readiness of future education managers for professional self-realisation after the first part of the experiment. The second cross-section was carried out after the end of the third course of study. Its task was to determine the level of formedness of skills and professional communication after the completion of experimental training and the effectiveness of our educational and methodological support, which contains authentic materials and a set of situational exercises

to form readiness for professional activity for future education managers. The third cross-section was made at the end of the first semester of the fourth year. Its task was to determine the level of formedness of skills of a professional education manager after the end of the experimental study in order to establish the effectiveness of our proposed methodology for training future specialists. During the sections of knowledge, students performed the following types of tasks: Solving situational problems, case studies, communicative trainings, and management seminars.

Educational and cognitive tasks that were created for the studied disciplines were focused on the basic requirements that related to managerial skills. Basic requirements are requirements such as conceptual skills, that is, a person's skills to perceive an organization as a whole and at the same time clearly understand the specifics and interrelationships of its parts, social skills, that is, skills of working with people and achieving organizational goals with the help of people and technical skills, which are special skills and which are necessary to perform work tasks: Possession of methods, technologies, methods of solving problems, the ability to use equipment. Therefore, educational texts, exercises, and cognitive tasks included the lexical and grammatical material necessary to fulfil the professional functions of an education manager. The training complex was developed specifically to test the level of readiness of future managers for professional self-realisation: Development of writing skills; form of control – the ability to draw up plans, questions, annotations, resumes in thematic texts, writing private letters, essays, reports.

Students of the experimental groups performed situational exercises. The tasks used during the experiment provided for the manifestation of student skills in writing texts that contain given communication conditions and a description of the speech situation. An expert survey involved identifying the opinions of managers of practitioners and scientists exploring this area on the problematic aspects of training education managers. The survey suggested 12 key questions in blocks: Features of the training of education managers in the country; design of training content, priorities; difficulties and prospects.

Practitioners and scientists from Kazakhstan and Lithuania were involved as experts. The following is an analysis of expert responses. In the Republic of Kazakhstan, targeted training of education managers has been carried out for the past 10 years. Although, the first experimental programs began to be implemented in 1998 on the basis of Al-Farabi Kazakh National University at master's level. Modern requirements for the level of training of education managers are not regulated by the standard, and there are no professional standards of education managers in Kazakhstan. The difference between managers and directors, according to experts, is in functional responsibilities: Managers – directors and deputy directors of educational organisations; directors – leaders of educational systems at the region or district level. The functional responsibilities of an education manager are determined by the relevant provisions of the Ministry of Education and Science of the Republic of Kazakhstan. At the

same time, they note that directors of schools, colleges and kindergartens are taught management after being appointed to the post and there is not enough time for training. Training reserve managers does not justify itself. Of these, no more than 4% are prescribed.

Assessing the modern system of training education managers, experts note that the basic principles of educational design have remained unchanged, as they change as the goals of the activities of educational organisations change. In the framework of university programs, the quality of managerial training is low, because of the weak practical part. The parameters for evaluating the development of programs are qualimetric in nature, although there should be other evaluation systems. The state acts as the main employer in the training of education managers, but it does not deal with the intended purpose and managers are trained at universities only because it is fashionable. There is no state order for this profession. The state order remained after the Soviet planned economy. Government orders are orders for the supply of goods, the provision of services, which are placed by state and municipal organizations. These orders are financed from the state budget, regional and municipal budgets, as well as extra-budgetary funding sources.

The training of education managers (for the functional purpose of this profession) in the Republic of Lithuania began in early 2000 at the master's level, and in general, advanced training courses in management began to be offered in the country from the beginning of the 90s. As key requirements, experts highlight the ability of a manager to independently plan his/her activities in an educational institution, pursue a financial policy, manage the learning process at school, and manage material and human resources. In general, the requirements for the education managers are enshrined in the legislative and regulatory documents of Lithuania. The experts do not note a significant difference between managers and directors, it is often used as synonyms. Purely theoretically, these concepts differ in that the activity of a director is an activity aimed at streamlining of planned processes in a team, then the main task of a manager is to create a self-organising team that will develop in any conditions.

At present, issues of professional suitability and the creation of a reserve of education managers are relevant for Lithuania. For several years now, a system for testing applicants has been introduced in the country: Those who want to occupy the positions of managers in educational institutions must pass professional suitability tests. Tests are carried out in a centralised way (the organisation under the Ministry of Education and Science is responsible for them); passed tests receive confirmation of compliance with the requirements for the manager in the field of education (the requirements are expressed by a set of competencies, the tests are designed in such a way as to identify these necessary competencies). Tested persons form a reserve of potential managers and have the opportunity to nominate for managerial positions. You can also highlight the problem of rotation of managers, which is associated with the above. The main difficulties in the practical activities of education managers are associated with the perception and evaluation of the activities of leaders on the part of society.

Frequent changes in the legislative framework and reforms have not quite a positive impact on managers. There is also no standard in Lithuania.

Mainly, the following are distinguished as functional duties:

– Organisation of the development of training programs in accordance with the needs of students, society and based on legislative documents of the country;

– Organisation of the development of a strategic plan for the development of the organisation and its implementation on the basis of empirical research, evaluation of new ideas and possible social consequences;

– Creation of the necessary conditions and clear plans for further career growth of all members of the organization and improving their qualifications.

In the structure of training, the following groups of competencies are distinguished as guidelines: Management of the organisation's policy and strategy; content management; people management; resource management. As the leading technologies providing the formation of these competencies in the university environment, project technologies, "case study", mixed technologies and e-learning, etc. The main principles of designing the content of training for the Ministry of Education are consideration of the current context, educational policies, practical needs, as well as borrowing the experience of other countries. The quality of training should be ensured by the integration of university education and professional training. At the moment there is poor integration. Ideally, employers should be involved in program design. There are examples when employers – local government administrations – take the initiative to organise different courses, study for the closest reserve of school leaders. However, this is not enough.

Experts do not see a significant difference in concepts between manager and executive, these words are synonyms, but in general semantics "direction" is a broader concept than "management". Since education is practically not a subject of the market, in any case, the principles of management can only be partially implemented. Difficulties in the work of education managers are: An uncertain regulatory framework; lack of funds for material incentives; excess reporting; a large number of activities launched from the top, which are often complementary to the actual practice of the school, and therefore unnecessary; entrusting with the education managers a large number of economic functions in the absence of specialists capable of performing them.

The functional responsibilities of an education manager, based on professional standards, include four generalised duties, which fall into 52 labour. The planning function – orders, recommendations, planning of the educational process, strategic planning, personnel planning, procurement planning, etc. The function of an organisation is to bring the decision

(plan) to an executor, material and technical support for the possibility of implementing this decision, coordinating this decision with the settings and needs of subordinates, delegating authority. The function of motivation is the creation of a system of motivation and stimulation. The control function is the process of obtaining and processing information about the progress and results of the educational process and making appropriate management decisions on its basis (monitoring, studying, analysing, diagnosing and evaluating the performance of performers).

Among the relatively new principles for the content of training education managers: The introduction of social partnership as a requirement (the need to involve employers in the planning and implementation of educational programs); revision of pedagogical technologies used in the learning process (continued bias towards interactive forms); focus on Softskills development; project approach; reduction in the percentage of lectures; increased role of self-education; digitalisation. Unfortunately, evaluating the quality of training, experts disagreed. It turns out that the strategic and innovation block is practically not in demand, since managers are "sucked up" by solving operational problems, which is complicated by the fact that the management apparatus in educational organisations, especially of secondary education, is small and loaded with reports. Employers do not evaluate the quality of training, but the ability of managers to solve current problems. However, in the fact that the weak integration of educational, scientific, and industrial activities leads to the separation of theory from practice, experts have shown unanimity. The participation of employers in the design of content is the same as in Kazakhstan: Employers review educational programs, take students to practice, and participate in final certification. However, real participation in the design of the content is weak and often it is formal.

To analyse the results of an experimental study, we recorded the dynamics of indicators of levels of readiness for professional self-realisation of students studying in the control (CG) and experimental groups (EG) from the first to fourth years (Table 1).

Table 1: Results of the Formative Stage of Experimental Study

Year	Group	Stage of control	Indicators of students' radiness for professional self-realisation								Average
			High (5 points)		Sufficient (4 points)		Satisfactory (3 points)		Low (2 points)		
			People	%	People	%	People	%	People	%	
1	CG	Entry control	2	1.79	40	35.71	66	58.93	4	3.57	3.36
		Final control	3	2.68	42	37.5	65	58.03	2	1.79	3.41
	EG	Entry control	2	1.92	36	34.62	63	60.58	3	2.88	3.36
		Final control	9	8.65	43	41.35	52	50.0	0	0	3.59
2	CG	Entry control	2	1.9	38	36.2	63	60.0	2	1.9	3.38
		Final control	3	2.85	40	38.1	61	58.1	1	0.95	3.4
	EG	Entry control	7	7.0	40	40.0	53	53.0	0	0	3.54
		Final control	11	11.0	44	44.0	45	45.0	0	0	3.66
3	CG	Entry control	1	1.02	38	38.78	58	59.18	1	1.02	3.4
		Final control	2	2.04	39	39.8	57	58.16	0	0	3.48
	EG	Entry control	7	7.37	39	41.05	49	51.58	0	0	3.56
		Final control	13	13.68	43	45.26	39	41.05	0	0	3.73
4	CG	Entry control	2	2.13	33	35.11	59	62.76	0	0	3.43
		Final control	5	5.32	35	37.23	54	57.45	0	0	3.48
	EG	Entry control	11	11.96	41	44.56	40	43.48	0	0	3.69
		Final control	19	20.65	49	53.26	24	26.09	0	0	3.95

An analysis of the tabular data allows to conclude that regardless of the fact that the number of students in the control and experimental groups changed annually, the effectiveness of the formation of future managers of education for professional self-realisation in the experimental groups was determined by the best indicators at all levels than in the CG. Comparing the dynamics of the average indicators that was observed in the CG and the EG throughout the entire formative stage of the experimental study. At the beginning of the formative stage of the experiment, it was found that the average readiness for future self-realisation of future education managers in the control and experimental groups has the same value – 3.36 points.

After completing training in the first year in the CG, this indicator increased to 3.41 points (by 0.05 points), and in the EG – up to 3.59 points (by 0.23 points), which is 0.18 points more than in control groups. It should be noted that according to the results of entrance control in the second, third and fourth courses, the average indicator (like all other indicators of students' readiness levels for professional self-realisation) in the EG was higher (3.54 points – 2 year; 3.56 points – 3 year; 3.69 points – 4 year) than in the CG (3.38; 3.4; 3.43 points, respectively), which is explained by the positive influence of our experimental methodology for training future education managers in experimental groups from the first year.

The dynamics of the average readiness indicator for future self-realisation of future education managers who continued to study in the second year was determined by the following digital data: In the CG, the average indicator increased from 3.38 to 3.4 points (by 0.02 points), and in the EG – from 3.54 to 3.66 points (1.12 points), which is 0.1 points better than in the control groups. In the third year, among future education managers who studied in the CG, the average readiness for professional self-realisation increased from 3.4 to 3.48 points (by 0.08 points), and in the EG from 3.56 to 3.73 points (0.17 points), which is 0.09 points higher than in the CG.

At the final stage of the experimental study (in the fourth year), the average index of readiness for professional self-realisation among students in the CG increased from 3.43 to 3.48 points (by 0.05 points), and in the EG from 3.69 to 3.95 points (0.26 points), which is 0.21 points better than in the CG. The dynamics of the average readiness of students for professional self-realisation, which was observed during the formative stage of the experiment, is shown graphically in Figure 1.
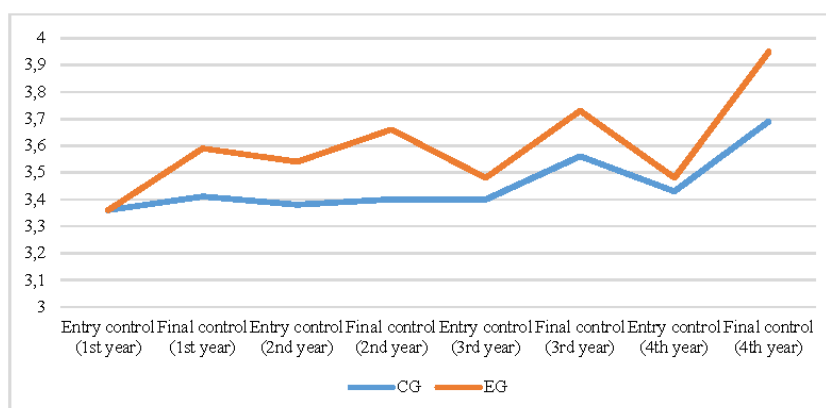

*Figure 1: Dynamics of Changes of Average Indicator of
Students' Readiness for Professional Self-Realisation*

Since in the process of the formative stage of the experimental study, progressive dynamics of improving the results of the formation of readiness for future self-realisation of future

education managers who studied in control and experimental groups was observed, we analyse the generalised indicators from the beginning of the experiment (entry control in the first year) to its completion (final control in the fourth year), which is reflected in Table 2.

Table 2: The Generalised Results of the Forming Stage of the Experimental Study

Groups	Stage of control	Indicators of students' radiness for professional self-realisation								Average
		High (5 points)		Sufficient (4 points)		Satisfactory (3 points)		Low (2 points)		
		People	%	People	%	People	%	People	%	
CG	Entry control	2	1.79	40	35.71	66	58.93	4	3.57	3.36
	Final control	5	5.32	35	37.23	54	57.45	0	0	3.48
EG	Entry control	2	1.92	36	34.62	63	60.58	3	2.88	3.36
	Final control	19	20.65	49	53.26	24	26.09	0	0	3.95

Analysis of the table data allows to admit the effectiveness of our experimental methodology and its positive impact on the formation of readiness for future self-realisation of future education managers. Since the number of students in the CG and the EG constantly changed throughout the experimental study, we consider it appropriate to compare these data in percent, namely:

– In terms of high level indicators in the CG, there was an increase in such students from 1.79% to 5.32% (by 3.53%), and in the EG from 1.92% to 20.65% (by 18.73%), which is 15.2% more than in the control groups;

– In terms of a sufficient level in the CG, the number of students increased from 35.71% to 37.23% (by 1.52%), and in the EG from 34.62% to 53.26% (by 18.64), which 17.12% more than in control groups;

– In terms of a satisfactory level in the CG, the number of such students decreased from 58.93% to 57.45% (by 1.48%), and in the EG from 60.58% to 26.09% (by 34.49%), which is 33.01% better than in the CG;

– According to the low-level indicators in both categories of groups, upon completion of the formative stage of the experiment, there were no students with a significant increase in the level of readiness.

The dynamics of readiness indicators for future professional self-realisation of future education managers who studied in control and experimental groups is reflected in histograms (Figure 2).
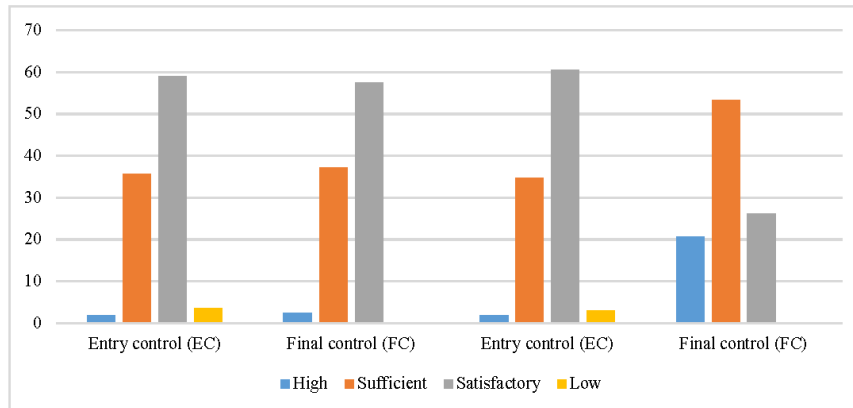
Figure 2: Dynamics of Readiness Indicators for Professional Self-Realisation of
Future Education Managers who Studied in Control and Experimental Groups

In order to verify the reliability of the results and to formulate conclusions, we used methods of comparative analysis and mathematical statistics (cluster analysis) to process the results of a pedagogical experiment. The effectiveness of training future education managers of control groups was compared with the same indicators of students who studied in experimental groups. To analyse and generalise the results of our work, the essence of the null and alternative hypotheses of experimental research was determined. In the null hypothesis, it was suggested that the positive dynamics of the results of the professional training of future education managers who studied in control groups are a consequence of the natural learning process. An alternative hypothesis of our study was the assumption that the improvement in the results of professional training of students of experimental groups is determined by the targeted use of the proposed methodology for the formation of future managers of education readiness for professional self-realisation based on the acmeological approach.

In order to determine the reliability of the results of our study, we determined the F-criterion for the experimental groups (empirical criterion) and compared with the theoretical F-criterion. F-criterion we determined by the (Eq. 1):

$$F_{emp} = \frac{\sigma_1^2}{\sigma_2^2},$$ (1)

where σ_1^2– variance at the input stage of determining the levels of readiness for professional self-realisation of future education managers; σ_2^2 – variance in the final control of the effectiveness of the formation readiness for professional self-realisation of future managers of

education on the principles of the acmeological approach at the final stage of the experiment. The dispersion is determined by the (Eq. 2):

$$\sigma^2 = \frac{\sum f(x_i - x)^2}{N},$$

(2)

where *f* is the number of students whose grades 5, 4, 3, 2 reflect, respectively, high, sufficient, satisfactory, and low levels of readiness of future education managers for professional self-realisation based on the acmeological approach; $(x_i - x)$– the difference between the individual values of the estimates (5, 4, 3, 2) and the value of the average indicator for a certain group and stage of control; *N* is the number of students in those categories of groups (control or experimental) where the variance is calculated. The results of the calculation of the F-criterion are shown in Table 3.

Table 3: The Results of the Calculation of the F-Criterion

Group	Stage of control	Average grade	Indicators for the calculation of the F-criterion								σ^2	F_{emp}
			f			$(x_i - x)$			$\Sigma f(x_i - x)^2$			
			5	4	3	2	5	4	3	2		
CG	Entry control	3.36	2	40	66	4	1.64	0.64	-0.36	-1.36	37. 7143	0.3367	1.06
	Final control	3.48	5	35	54	0	1.52	0.52	-0.48	-1.48	33.4575	0.3559	
EG	Entry control	3.36	2	36	63	3	1.64	0.64	-0.36	-1.36	33.8365	0.3254	1.43
	Final control	3.95	19	49	24	0	1.05	0.05	-0.95	-1.95	42.7283	0.4644	

The analysis of Table 3 makes it possible to determine the following key indicators: In the control groups at the stage of input control, the dispersion (σ_1^2) is 0.3367, and at the stage of final control (σ_2^2) – 0.3559. Therefore, the F-test for control groups (F_{emp}-CG) has a value of 1.06. Calculations to determine the dispersion in the experimental groups showed that at the input control stage the dispersion (σ_1^2) is 0.3254, and the variance of the final control (σ_2^2) is 0.4644. the empirical indicator of the F-criterion for the experimental groups (F_{emp}-EG) is 1.43. To verify the reliability of these results, we compared the indicators of the empirical F-criterion (F_{emp}-CG and F_{emp}-EG) with the theoretical F-criterion (F_{erit}), the numerical values of which are given in the corresponding table. The indicator F_{erit} is established by the number of degrees of freedom, and in our study, it has a value from 111 (112 students of the CG at the stage of entrance control minus 1) to 91 (92 students of experimental groups at the stage

of final control minus 1). Provided that the number of degrees of freedom of the numerator will be in the range from 24 to infinity, and the denominator – from 60 to 120, the indicator F_{erit} will have values from 1.7 to 1.3.

Comparing the values of F_{emp}-EG with a standard indicator, its value of 1.43 is within the specified limits. This means that the results of our experimental study on the formation of the readiness of future education managers for professional self-realisation based on the acmeological approach are reliable and confirm the reliability of the experiment. The F_{emp}-KG indicator with a value of 1.06 goes beyond reliability, therefore, we believe that a slight increase in the level of readiness of future education managers for professional self-realisation, who studied in control groups, is associated with the conditions of the traditional learning process. Thus, it can be argued that the effectiveness of the formation of the readiness of future education managers for professional self-realisation depends on the targeted application of the proposed training methodology.

The observation showed that with a constant increase in the number of graduates, their employment level decreased from year to year, which is confirmed by the data in Table 4.

Table 4: The Proportion of Employed Graduates of 2014-2019

	Total	2014	2015	2016	2017	2018	2019
The Republic of Kazakhstan	87.2	94.7	92.7	92.1	90.9	85.6	70.4
The Republic of Lithuania	84.0	94.1	91.7	82.9	91.0	78.5	71.9

Note. Values are given as a percentage, % (Ņikišins, 2017).

Employment problems particularly intensified in 2018-2019, which reflects the difficult economic situation in this period both in countries as a whole and in individual regions. It should be noted that already in 2016, in the Republic of Lithuania the share of employed graduates decreased to 82.9% (by 8.8 percentage points), and this despite the increase in the total number of people employed in the Republic by 2.5 thousand people. (up to 1078.1 thousand people from 1075.6 thousand people in 2015). The rational and effective use of graduates involves, first of all, their employment in accordance with the speciality received at the university (the direction of training). In practice, this does not always happen, as can be seen from the data in Table 5.

Table 5: Employment of Graduates of 2014-2019 for the First Job Related to the Acquired Profession (Speciality)

	All graduates	Including				
		Higher education on programs for personnel of the highest qualification	Higher education on specialist programme and magisterium	Higher education on bachelor programme	Secondary vocational programs in training specialists of mid-level	Secondary vocational training programs for skilled workers, employees
The Republic of Kazakhstan	59.9	85.3	64.2	60.3	55.7	52.2
The Republic of Lithuania	59.7	100.0	62.8	75.8	51.9	48.7

Note. % of the total number of graduates of the corresponding level of education (Compiled by the authors).

The highest rates of employment for the first job related to the acquired profession (speciality) are among people with higher education in higher education programs. The level of employment of graduates of a specialist programme and a magistracy is slightly higher than that of a bachelor. It is noteworthy that graduates of secondary vocational educational institutions, especially in training programs for skilled workers, look less competitive in terms of employment compared to graduates with higher education. And this despite the numerous allegations of enterprise managers about the lack of skilled workers in the region's enterprises. The main problems faced by graduates in employment are reflected in Table 6.

Table 6: Structure of Graduates of 2014-2019 With Higher Education Based on Difficulties When Trying to Find Employment

	The Republic of Kazakhstan	The Republic of Lithuania
Lack of work experience	71.5	73.8
Non-compliance with qualification requirements (in the level of training, knowledge necessary to complete the work)	9.1	7.0
Could not find a job in the obtained profession (speciality)	23.5	16.6
Low wages offered	41.6	62.8
Lack of suitable jobs	27.2	28.2

Note. Values are given as a percentage, % (Compiled by the authors).

As follows from Table 6, the main problem with the employment of graduates is the lack of practical work experience, which in most cases is the main requirement for employers. The Republic of Lithuania as a whole is not very different from Kazakhstan in terms of employment problems for graduates, with the exception of wages. Almost 2/3 of graduates indicated its low level, which is much more than in Kazakhstan. Over the years, the average wage in the region is 56-58% of the average European level. And the salary of graduates of 2019 employed in the republic is about 2/3 of the average salary of young specialists employed outside the country.

5 Conclusions

In the course of the study, the tasks that contributed to the preparation of the future education manager for professional self-realisation have been solved: The parameters of educational and methodological support have been developed and tested, which contains authentic materials and a set of situational exercises to form readiness for professional self-realisation for future education managers; the methodology of vocational training of students for the purpose of their self-realisation during training has been specified; certain pedagogical conditions were realised according to the model for the formation of professional self-realisation of future education managers.

The formative stage of the experimental study envisaged a generalisation of psychological and pedagogical positions and achievements of advanced pedagogical experience and showed that the leading direction in the formation of readiness for professional self-realisation is the creation of such pedagogical conditions under which a student can take an active personal position and prove himself/herself to the greatest extent as a subject of educational activities and future specialist. Based on the analysis of the results of the experimental research, the dynamics of changes in the indicators of the levels of readiness for professional self-realization of students studying in the control and experimental groups from the first to the fourth year was compiled and recorded. The generalised indicators of the forming stage of the experimental have been analysed and the dynamics of the readiness indicators of future education managers for professional self-realisation who were trained in control and experimental groups, have been reflected in the histograms.

Our analysis indicates serious problems with the employment of university graduates both in the Republic of Kazakhstan and to an even greater extent in the Republic of Lithuania. To solve these problems, it is necessary to create a comprehensive mechanism for matching the needs of the economy in personnel with the scope and areas of professional training at universities, since the education system must adequately respond to the demands of the labour market. In our opinion, this problem cannot be shifted only to universities, it is necessary to more actively involve both employers and administration of the governments to solve it.

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