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Formation of future teachers' strategic leadership competence in the process of Master's program training

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Abstract.
The article substantiates the need to form the strategic competence of future teachers in postgraduate education. The authors formulated the concept of "strategic leadership competence of a future teacher" and presented the components and indicators of the competence. The effectiveness of the curriculum "Pedagogical management and management in modern school" developed and implemented in the educational process in forming the competence of strategic leadership of a future teacher is proved. Confirmation is maintained by the presented results of the study, which showed positive dynamics in the level of the researched competence formation.

Keywords: strategy, strategic competence, leadership, case-study, training

1 Introduction

The category of "strategic management" originally appeared in economics, the essence of which was to manage the company, ensure competition in the external environment, and lead to a goal. The notion of strategy in scientists' research was considered from different positions: as a clear direction for solving unexpectedly arising problems, it is presented in the works of I. Ansoff, A.J. Strickland, O.S. Vikhansky.

M.Kh. Mescon, F. Hedouri, D. Hunger, and others considered the strategy in the form of a detailed plan of action. The strategy as the achievement of the goal by building a long-term perspective of the company was considered by A. Chandler and others.

Thus, strategy can be seen as the main link between what an organization wants to achieve: its goals and the course of action chosen to achieve those goals. (Strikland, A. J., Tompson, A.A.).

A radical restructuring in the education system of the Republic of Kazakhstan made it possible to take a fresh look at the training of future teachers in the conditions of the university and postgraduate education. Training of such teachers who would be ready to independently determine the goals of the educational process of the class or academic discipline, develop and analyze strategic "steps" of operational management to achieve goals, taking into account the current state of scientific and technological progress and the economic level of the state has become crucial. Consequently, when training teachers, it is necessary to form the competence of teachers' strategic leadership, which will allow them to successfully solve problems in the field of teaching and learning management, education, development, and upbringing.

2 Materials and Methods

The study of the development degree of teacher's strategic competence of Master's program students in the direction "Pedagogical Sciences" when studying "Pedagogical management and management in a modern school" course was carried out through the diagnosis of its components (cognitive, motivational, design, activity and personal). The study involved 50 students. In order to study the features of the cognitive component of the strategic leadership competence of a future teacher, Master's students completed the "Thinking Styles" questionnaire (R. Harrison, R. Bramson, adapted by A. Alekseev, L.A. Gromova). The "Readiness for self-development (V. Pavlov) "test for the motivational component research. The design component was studied by employing a "Questionnaire for assessing the ability to predict" diagnostic test (L.A. Regush). The activity component was analyzed with the help of the "Melbourne Decision Making Questionnaire" (L. Mann et al., adaptation by T. V. Kornilova). The individual component was studied through the "Test of emotional intelligence" (N. Hall). To identify the effectiveness of developing the components of the strategic leadership competence of a future teacher of Master's students in the framework of mastering the "Pedagogical management and management in a modern school" course, we used the Wilcoxon T-criterion. The reliability of the results of the study is ensured by the observance

of the methodological and theoretical principles of work; the use of standardized methods that are adequate to the purpose and objectives of the study; statistical significance of the obtained results.

3 Results

Two principles play a considerable role in strategic management: productivity and efficiency. Concerning pedagogical management, productivity will include the ratio of a quantitative indicator between the number of graduates to the enrollment of students and the availability of appropriate material and technical base. Compared to rural schools, city schools are in a state of continuous competition. It is expressed in attracting the number of students to the first grade, supporting and motivating the best teachers, and the image of the educational institution. Therefore, an effective strategy of an educational organization must have a transparent vector, both in terms of the intentions of actions and in the general direction of development. (Mel'nik, Yu.I., Vihanovskij, O.S.). A formulated strategy allows us to see and realize who will be the consumer of educational services, who will act as competitors, and what success factors will become crucial and require continuous improvement.

Strengthening competitive advantages includes achieving higher indicators in upbringing, education, and development, which are essential for the target audiences of consumers, which are parents and students. (Chichkanova, T.A.).

An educational organization can gain a competitive advantage by:

- introduction of new technologies (educational, information and communication, and health-saving);

- timely and prompt response to consumer requests;

- the emergence of a new segment of the activity or the regrouping of existing ones (opening pre-school classes at schools - the continuity of the levels of education, rapid adaptation to new conditions).

The essence of a strategic competence is to carefully study the possibilities of all available choices and determine the priority areas, the implementation of which will allow one to take a leading position in the educational services market. (Sitarov, V.A.).

Given this justification, we have formulated the concept of "competence of strategic leadership of a future teacher" - this is a component of the professional competence of a manager of an educational institution / educational process, manifested at all

levels of education, including cognitive, motivational, design, activity and individual components. The components and their criteria are presented in Table 1.

Table 1- Components and criteria of strategic leadership competence of a future teacher

Competence	Components	Criteria/component indicators
strategic leadership of a future teacher	cognitive	awareness of planning and management of educational institution, strategic thinking
	motivational	striving for sustainable self-development and the development of an educational institution
	design	strategic vision, planning processes
	activity	strategic management of an educational institution, making managerial decisions
	individual	developing and improving leadership skills

Based on this concept, as part of the training of future teachers within the Master's program in "Pedagogical Sciences" direction, the "Pedagogical management and management in a modern school" course was developed. This program has passed a positive external examination by reviewers and was approved by the decision of the educational and methodological council of M. Kozybayev North Kazakhstan University. The implementation of this program implied obtaining the following results. Master's students will be able:

- to develop unique strategies for the development of an educational institution;

- to have the skills to see the problems of an educational institution, to ensure resistance to risks; development and implementation of models, methodological technologies, and innovative methods, and their implementation in the activities of an educational institution;

- to have organizational skills of teamwork to solve the problems of the development of an educational organization;

- to demonstrate the competencies of managing a group of students, a structural unit, or an educational institution;

- to demonstrate Soft Skills in management and decision-making.

The course program consists of five modules:

Module 1: Formation and development of management in the theory and practice of education.

Module 2 Functions and management of an educational institution.

Module 3: Management culture of the head of a general education institution.

Module 4: Strategic Management in Education.

Module 5 Practice of pedagogical management.

In order to effectively conduct practical classes, the structure of a collaborative lesson was developed and tested, which allows you to go from a problem to achieve a strategy through goal setting, planning, and developing a working strategy. The structure of the collaborative lesson consists of five stages - preparatory, theoretical, analytical, practical, and reflective. From stage to stage of the lesson, there is a consistent, purposeful formation of the components of the strategic leadership competence of a future teacher.

Particular attention was paid to the organization of independent work of students, in which logic, independence, initiative, sociability, and the desire to achieve the best result were visible. At the same time, some classes involving Master's student's independent work did not end with the study of only one module but had further work in the study of subsequent modules. So, for example, in the process of studying Module 2, "Functions and management of an educational institution," Master's students were asked to complete the following task: to develop strategic goals for educating students in a secondary school in the context of the implementation of the "Rukhani Zhangyru" national program of the Republic of Kazakhstan. They were also supposed to justify the defined priority areas and expected results.

The form of providing the completed task is a "tree" of goals. Completing the task allows Master's students to form the ability to determine the priority in the form of a hierarchical structure - the allocation of a common goal and goals subordinate to it - goals of the second plan.

In studying Module 3, "Management culture of the head of a general education institution," the work on the "tree of goals" was continued. Master's students were asked to complete the following task: "Develop the SMART criteria for the "tree of goals." Based on the criteria, analyze how realistically you formulated the goals of education. Propose corrective actions."

The form of this task submission was the SMART criteria presented in the analytical table.

This work aims to improve system analysis skills, teach students to work with various diagnostic methods, and manage and direct the process of development and self-improvement. The use of tasks based on the analysis of programs implemented in the schools of the Republic of Kazakhstan makes it possible to form the competence of strategic leadership of future teachers, corresponding to real-time and in demand in the labor market.

In Module 4, "Strategic Management in Education," Master's students performed the following task: "Formulate the mission of a particular educational institution and determine the needs of students (parents) it is aimed at. Make a "SWOT-analysis" on the possible implementation of the formulated mission. The form of submission: SWOT-analysis, case analysis".

The implementation of interactive teaching methods in studying the "Pedagogical management and management in a modern school" course allows for a more effective and guaranteed formation of the strategic leadership competence of a future teacher. It provides a choice of methods for solving problems in professional activities.

Before the beginning of the course study and after its completion, we carried out the diagnostics of the components of the strategic leadership competence of a future teacher.

In order to diagnose the features of the cognitive component of the strategic leadership competence of a future teacher, the Master's students completed the questionnaire "Thinking Styles" (R. Harrison, R. Bramson, adapted by A. Alekseev, L.A. Gromova). It made it possible to identify students' preferred individual thinking styles (synthetic, idealistic, pragmatic, analytical, realistic), which are the basis of strategic thinking. Each person's style of thinking affects the ways of solving problems that he or she chooses on the ways of behavior. To assess the significance of differences in preferred thinking styles among undergraduates before and after studying the academic discipline "Pedagogical management and management in a modern school," we used the Wilcoxon T-test. The results of empirical values and the accepted hypothesis of the Wilcoxon T-test of indicators by thinking styles are presented in Tables 2 and 3.

Table 2 - Empirical values in terms of thinking style (increasing) among Master's students before and after studying the "Pedagogical management and management in a modern school" academic course (n=50)

Variable	Empirical values	Accepted hypothesis
Analytical style of thinking	T emp = 24.5	H_0 ($p \leq 0.01$)
Realistic style of thinking	T emp = 44	H_0 ($p \leq 0.01$)
Idealistic style of thinking	T emp =272.5	H_0 ($p \leq 0.01$)

Table 3 - Empirical values in terms of thinking style (downward) among undergraduates before and after studying the "Pedagogical management and management in a modern school" academic course (n=50)

Variable	Empirical values	Accepted hypothesis
pragmatic style of thinking	T emp = 148	H_0 ($p \leq 0.01$)
synthetic style of thinking	T emp = 82.5	H_0 ($p \leq 0.01$)

The results show that the Master's students have experienced significant upward changes in analytical, realistic, and idealistic styles of thinking and statistically significant downward changes in the performance of pragmatic and synthetic styles of individual thinking. After studying the course, the Master's students are more likely to systematically and comprehensively consider the issue or problem in the aspects set by objective criteria. In non-standard situations, they focus on correcting situations to achieve a particular result. Before making a decision, students became more inclined to develop a detailed plan, to collect objective facts. At the same time, they consider subjective and social factors in their decisions, strive to smooth out contradictions, and easily emphasize similarities in various positions. They perceive various ideas without internal resistance and proposals and successfully solve problems where emotions, feelings, assessments, and other subjective factors are crucial moments, trying to unite everyone.

To a lesser extent, Master's students tend to use only those materials and information that are readily available, led by the desire to get a specific result as quickly as possible, to have a practical advantage, without thinking about the consequences of such a choice. In addition, before making a choice, they try to have a clear idea of the goals and think over the best way to implement the decision.

The study of the level of development of the motivational component of the strategic leadership competence of future teachers was carried out through the diagnosis of Master's students' readiness for self-development using the test

"Readiness for self-development (V. Pavlov). In this test, readiness for self-development is represented by two indicators: readiness to "know myself" and readiness "I can improve myself." The results of empirical values and the accepted hypothesis of the Wilcoxon T-test of indicators for readiness for self-development are presented in Table 4.

Table 4 - Empirical values in terms of readiness for self-development among undergraduates before and after studying the academic discipline "Pedagogical management and management in a modern school" (n=50)

Variable	Empirical values	Accepted hypothesis
readiness to "know myself"	T emp = 55	H_0 ($p \leq 0.01$)
readiness "I can improve myself"	T emp = 72.5	H_0 ($p \leq 0.01$)

The analysis of mathematical statistics data showed that the intensity of shifts in the direction of increasing indicators of readiness to "know myself" and readiness "I can improve myself" exceeds the intensity of shifts in its decrease. Before studying the course, some Master's students showed fear or unwillingness to work on themselves and, accordingly, to improve themselves. This may be because they wanted to know more about themselves but did not yet possess the skills of self-knowledge, self-improvement, and self-development skills. Another part of the Master's students, before studying the course, had more significant opportunities for self-development than the desire to understand themselves. As part of practical exercises in solving cases and the implementation of reflection, the students got acquainted and mastered the methods of self-knowledge and self-development, which allowed the majority of them to personally "grow up," develop the need to know themselves more and more deeply, which is combined with the need for real self-improvement and self-development.

With the help of the "Assessment of the ability to predict" questionnaire developed by L.A. Regush, we have diagnosed the forecasting ability of Master's students as the ability to plan processes. This indicator was assessed as part of the study of the developmental characteristics of the design component of the strategic leadership competence of future teachers. The results of the empirical values and the accepted hypothesis of the Wilcoxon T-test of predictive ability scores are presented in Table 5.

Table 5 - Empirical values in terms of the ability to predict among undergraduates before and after studying the "Pedagogical management and management in a modern school" academic course (n=50)

Variable	Empirical values	Accepted hypothesis
ability to forecast	T emp = 55	H_0 ($p \leq 0.01$)

As can be seen from Table 5, the indicators of the level characteristics of the ability to predict among Master's students after studying the course exceed the values of the indicators before mastering the developed and implemented discipline. This indicates that Master's students were more likely to have medium and low levels of forecasting ability. They were characterized by forecasting based on a simple comparison of the past with the present, which is associated with low powers of observation and the ability to transform images based on knowledge of some specific situations in the past and observation of the present. As part of the study of the discipline, the undergraduates managed to develop such qualities as strategic thinking, the ability to analyze, be flexible in solving issues, argue a decision, and foresee the systemic effects of a decision. This will allow them, as future teachers, to withstand changing circumstances, plan the necessary transformations, and anticipate new directions and opportunities for the development of an educational organization.

One of the constituents of the activity component of the future teacher's strategic leadership competence is the ability of future teachers to make decisions. This parameter study was carried out using the Melbourne Decision Making Questionnaire (L. Mann et al., adaptation by T. V. Kornilova). This technique allowed Master's students to explore their preferred decision-making styles, such as vigilance, avoidance, procrastination, and hypervigilance. The authors interpret such a decision-making style as vigilance as productive and avoidance, procrastination, and hypervigilance as inefficient processes. The results of empirical values and the accepted hypothesis of the Wilcoxon T-test of indicators by decision-making style are presented in tables 6 and 7.

Table 6 - Empirical values in terms of decision-making styles avoidance, procrastination, hypervigilance among undergraduates before and after studying the "Pedagogical management and management in a modern school" academic course (n=50)

Variable	Empirical values	Accepted hypothesis
avoidance	T emp = 313.5	H_0 ($p \leq 0.01$)
procrastination	T emp = 300.5	H_0 ($p \leq 0.01$)
hypervigilance	T emp = 192	H_0 ($p \leq 0.01$)

It should be noted that such decision-making styles as avoidance, procrastination and hypervigilance were the most preferred for students before studying the course. It was common for most Master's students not to make decisions themselves but to shift responsibility for it to others explicitly or implicitly; postponing decision-making, while the more complex the choice, the more actively it was postponed; impulsive decision-making due to high levels of stress, they literally panicked and could not correctly analyze the available alternatives. In practical training and expansion of theoretical knowledge, as evidenced by comparative analysis and mathematical statistics, the indicators for these styles decreased.

Table 7 Empirical values for the indicator decision-making style vigilance among undergraduates before and after studying the "Pedagogical management and management in a modern school" academic course (n=50)

Variable	Empirical values	Accepted hypothesis
vigilance	T emp = 161	H_0 ($p \leq 0.01$)

The analysis of empirical values by the vigilance decision-making style showed that the H0 hypothesis is accepted, proving that the indicators after the experiment exceed the values of the indicators before the study. The results obtained allow us to conclude that after studying the course "Pedagogical Management and Management in a Modern School," Master's students began to strive to choose the most rational solution from all possible ones. At the same time, they prefer to consider all alternatives and try to find their shortcomings. In addition, before making a choice, they try to have a clear idea of their goals and think over the best way to implement the decision.

Professionally essential qualities of a specialist are qualities necessary for the successful implementation of professional activities. One of the professionally important qualities of a future teacher is emotional intelligence, the ability to understand and influence one's own emotions and the emotions of others. That is

why we studied the level of emotional intelligence as an indicator of the individual component of the future teacher's strategic leadership competence. For this purpose, we used N. Hall's Emotional Intelligence Test. The results of the empirical values and the accepted hypothesis of the Wilcoxon T-test of indicators for the level of emotional intelligence are presented in Table 8.

Table 8 - Empirical values in terms of emotional intelligence among undergraduates before and after studying the "Pedagogical management and management in a modern school" academic course (n=50)

Variable	Empirical values	Accepted hypothesis
Emotional intelligence	T emp = 353	H_0 ($p \leq 0.01$)

The analysis of mathematical statistics data showed that after studying the discipline "Pedagogical management and management in a modern school" course the intensity of shifts in the direction of increasing the level of emotional intelligence exceeds the intensity of shifts in the direction of its decrease. This is also evidenced by a comparative analysis of the level characteristics of emotional intelligence before and after studying the course: the number of undergraduates with high and medium levels of emotional intelligence has increased. This suggests that students are more able to differentiate their emotions and other people's emotions, begin to show empathy to a greater extent, manage their behavior by managing their emotions, and become more emotionally labile.

4 Discussion

The main task of university and postgraduate education lies in preparing such a specialist who could fulfill the tasks set in professional activity, according to the profile of the educational program that he has mastered. Thus, at the end of the training, we will get a specialist performer who is irrelevant to the modern world. On the one hand, such a specialist is in demand who could perform professional tasks mobile, flexibly, and with less time spent. On the other hand, employers want to see an active specialist who can independently set strategic goals, anticipate risks, and be interested in promoting an educational institution. Given this circumstance, we are convinced that the educational process of university and postgraduate education should be focused on forming competencies that allow us to give a guaranteed result in future professional activities. We refer to such competencies as the competence of strategic leadership of the future teacher.

5 Conclusion

The analysis of the results of the conducted experimental study allows us to conclude the effectiveness of the developed and implemented curriculum "Pedagogical Management and Management in the Modern School" for students in the educational program of the master's program in the direction "Pedagogical Sciences." Statistically significant shifts in the studied parameters of the strategic competence of future teachers occurred under the influence of the study of theoretical material and practical exercises, training, development of practical skills through the implementation of case tasks, and the implementation of self-study.
The formation level of the components of strategic competence leadership of the future teacher is sufficient. Undergraduates have the potential to improve competence further, readiness for management, making strategic decisions, and the ability to see risks, analyze them and find solutions.

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