

Professional knowledge management for managers of specialized universities: Strategic contexts

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ABSTRACT: The article presents a study of the reasons and motives for the emergence of educational requests from managers of a modern University. It was found that managers' educational requests contradict real needs, and their motives are associated with weak and strong knowledge, which depends on their age and professional experience, and not on the University profile. Thus, the authors presented a variant of interaction between project teams based on strong knowledge.

1 INTRODUCTION

Systemic changes occurring in the field of management of an educational organization are primarily associated with the introduction of the principles and mechanisms of project management and means that the role of project activities (both "external and internal") increases dramatically. In fact, the design and implementation of university development projects is becoming an important area of activity for managers, but for this they need qualifications based on the relevant competencies (Boselie, P., & Paauwe, J., 2005). First of all, these are competencies expressed through labor actions of a communicative nature, the methodological basis of which is the process of knowledge exchange, their processing and appropriation at the level of subjects of the management process. In addition, the following contexts and challenges are characteristic of the management of a modern Russian university:

- firstly, the "globalization" of Russian university education in the context of the transformation of "analog" universities into "digital" ones, the growing role of online education, the formation of universities as centers of innovative research and development, providing in the future the scientific leadership of Russia, internationalization and the growth of the "export" potential of Russian higher education, the development of "networkism" and the entry of Russian universities into international university corporations and other associations, etc. (President of Russian Federation, 2020; Government of Russian Federation, 2016, 2019; Kuzminov, Y. I., Frumin, I. D., 2018);
- secondly, regionalization, i.e. consolidation and emergence of national, federal, flagship and

leading universities (Ministry of education of Russian Federation, 2017);

- thirdly, the need to turn Russian universities into the main driver of scientific and technical and technological development of the country, create and improve the activities of world-class scientific and educational centers (Government of Russian Federation, 2019), approve and implement the program strategic academic leadership (Government of Russian Federation, 2020);
- fourthly, the process of introducing professional standardization of managers' activities as a manifestation of global and all-Russian tendencies characteristic of society and the economy as a whole (Government of Russian Federation, 2019);

Currently, strategic development programs are a necessity (Berggren, C., & Söderlund, J., 2008), as they provide an opportunity to participate in various competitions and activities to attract additional resources (primarily financial) (Ministry of economic development of the Russian Federation, 2017), which are carried out within the framework of the implementation of the State Program "Development of Education in the Russian Federation", the national project "Education". In the near future, the role of strategic programs and projects will increase even more, as it is planned to adopt a new national project "Science and Universities". (Government of Russian Federation, 2020). This project should serve as one of the tools for the implementation of the national development strategy presented in the Decree of the President of the Russian Federation No. 474 of July 21, 2020 "On the national development goals of the Russian Federation." (President of Russian Federation, 2020).

Thus, the project competence of specialists is the basis for the effective and productive functioning of the university, which reduces the risks of erroneous management decisions, duplication of managerial functions and expands the capabilities of operational management of organizations (Pavitt, K., & Walker, W., 1976).

It is known that information and knowledge are of a cumulative nature, and the infrastructure of their transfer along the levels of the job hierarchy at the university is horizontally and vertically oriented (Argyris, C., 2011). Thus, the depth of professional experience and knowledge of each employee about the specific features of the functioning of the university have a great influence on the final result, because the knowledge of top managers summarizes the knowledge of managers, and those, in turn, summarize the knowledge of specialists, etc. (Salipante, P., 2003; Sharifi, H., 2014).

Thus, the following is a description of research work to identify the existing qualification deficits and the nature of their appearance, contributing to the formation of the specifics of professional interactions of university managers in the main areas of activity of a modern university (Peters, MA, 2013).

2 MATERIALS AND METHODS

The theoretical and methodological basis of the research was the works of researchers Viig K., Bleckler F., Katkalo V.S., North K., Milner B., Foz N. concepts of knowledge management theory, Atamanchuk G.V., Supera J., Bazarova T. Yu. The theory of personnel management (human resources management), Durkheim E., Merton R., Parsons T. foundations of management theory, Adizes I., Cox D. theory organizations and management practices, Mintzberg G., Katkalo V.S., Thomas V., Thompson A., Strickland A., Kiernan K., Vachugov D.D., Churchill G.A. in the field of management, V. A. Yadova, E. Babosova, A. Buyulya, I. F. Devyatko, Yu. M. Plotinsky. in the field of sociology and sociological research.

The research was carried out in three stages. The first stage consisted of a survey of respondents from a survey of 310 respondents from 8 federal districts of the Russian Federation, 12 profiles of educational organizations of higher education, of which 21% are SRUs, Federal, support and 79% regional. The second stage was the processing of the data obtained, the analysis of the results and their interpretation. The third one is interviewing 5 respondents-experts and 4 respondents-participants of two focus groups of the academic environment and a survey of 10 experts-heads of universities.

One of the tasks of the analysis of personal data was to determine the request for the necessary educational programs from the point of view of

university managers. The task was also carried out to identify the causes of their occurrence.

To identify the reasons for the occurrence of qualification deficits, a factor analysis was carried out, according to the methodology of which the analysis of answers to 28 questions based on the semantic differential was carried out on the scale "has not changed - not much - very noticeable - it is difficult for me to answer (I am not doing this)" ...

The factorial method of analysis was chosen as a universal method of situational analysis for assessing expected changes as a result of outlined trends in managerial influences and obtaining analytical dependence on the basis of statistical data.

3 RESULTS

The results of the answers underwent primary processing, which include the primary relative variances of simple factors, eigenvalues and percentages of the explained variance, the derivation of univariate statistics and correlation coefficients with the compilation of a correlation matrix using principal component analysis. with a limitation of five factors.

Then the rotation was carried out according to the Varimax method to obtain a simple structure, which corresponds to the highest load value for each variable and only one factor. Factor loads can be applied as the correlation coefficients of each variable with each of the identified factors. Then the primary statistics are given: Bartlett's criterion of sphericity, which shows a statistically significant result (Table 1).

The results of the analysis showed the presence of 5 factors (I - 21.4% of the total variance, II - 40.8%, III - 48.7%, IV - 55%, V - 61%.) With a statistically significant result ($1 > p > 0.5$, $p = 0.712$), which were correlated with the conceptual levels of knowledge according to Wiig and the areas of professional activity of the manager: the first factor is associated with the strategic management of the external development of the educational organization, the second - with the strategic management of internal development, the third - with organizational processes, the fourth - with production, the fifth - with the analytics of professional activity.

Further, the calculation of factor values for each respondent was carried out by age, by work experience, by type and level of position, by the profile of professional activity, by the status and profile of the university. When carrying out the calculation, both "weak" and "strong" knowledge of university managers were identified.

Skill gaps associated with weak knowledge:

- strategic management of the external development of the organization for managers with 8-12 years of work experience or legal profile;

Table 1. Adequacy measure and Bartlett's test (KMO and Bartlett's Test).

Kaiser-Meyer-Olkin measure of selective adequacy		0,712
Bartlett's criterion for sphericity	Approx. chi-square	930.635
	st.	378
	Value	0.000

- strategic management of the organization's internal development - at the age of 60-64 years or with 3-8 years of work experience;
- organizational processes - at the age of 50-54, or with work experience of 1-3 years, or legal, socio-economic profiles;
- production processes - at the age of 40-44, 60-64 years, or with work experience up to 1 year, or legal, creative profiles;
- analytics of professional activity - at the age of 25-29, 40-44 years, or with work experience up to 1 year, or socio-economic profile.

Further, the procedure of cluster analysis was carried out, as part of the factor analysis, in order to obtain groups of respondents similar in a number of signs-motives of the emergence of educational requests. With a sample of 310 respondents, the method of cluster centers was chosen.

As a result of calculating the data, cluster centers and generalized data of the iteration process (30 in total) were obtained, then cluster centers (Table 2) and the number of observations were obtained.

When assessing cluster centers, it was considered that the values of the factors are in the range from -3 to +4, moreover, in accordance with the encoding on a semantic scale from 1- not important to 4- very important, and 5- difficult to answer, a large negative value of a factor means its low degree of manifestation, and vice versa, a large positive value is high.

Therefore, considering all the above indicated values, cluster centers are presented with the following interpretation (Table 3):

Cluster 1: focused on the basic processes of the university;

Cluster 2: resource-oriented activities of the university;

Cluster 3: focused on the organization of the corporate culture of the university.

With the help of the obtained cluster centers, the analysis of the motives of the manifestation of qualification deficits among the respondents was carried out.

Thus, by calculating the obtained factor values, it was determined that the qualification deficits of university managers at the time of the questionnaire were not associated with either professional activity, nor the

Table 2. Cluster centers.

	Cluster		
	1	2	3
REGR factor score 1 for analysis 2	1.50327	-2.92535	0.80851
REGR factor score 2 for analysis 2	-2.21373	0.88185	0.00692
REGR factor score 3 for analysis 2	-3.21795	0.64616	1.65142
REGR factor score 4 for analysis 2	0.20859	0.84479	-2.53422
REGR factor score 5 for analysis 2	-0.68791	0.19879	-1.09255

Table 3. Distribution of motives for the manifestation of qualification deficits.

University profiles	Clusters, %		
	1	2	3
Law Universities	0	67	33
Socio-economic universities	40	40	20
Universities of culture and art	0	86	14
Military, maritime universities	0	50	50
Humanities Universities	50	50	0
Medical universities	14	62	24
Pedagogical universities	14	43	43
Agrarian (Agricultural) Universities	11	67	22
Technical universities	28	53	19
Multidisciplinary universities	0	60	40
Architectural and construction universities	100	0	0
Classical universities	48	43	9

type and level of position, nor with the status of the university, but were associated with their age and work experience, as well as with the profile of the university. At the same time, in each of the five areas of professional activity, there are certain ranges of the formation of a lack of knowledge and the motives for their occurrence, for example, in the resource and basic support of the university's activities, as well as in the field of corporate culture formation (Figure 1).

4 DISCUSSIONS

As noted above, systemic changes in the work of Russian universities contributed to the formation of project management in defining and implementing the tasks of their strategic development. Therefore, in the professional activities of university managers, it became necessary to combine project activities aimed at development with the implementation of tasks, the

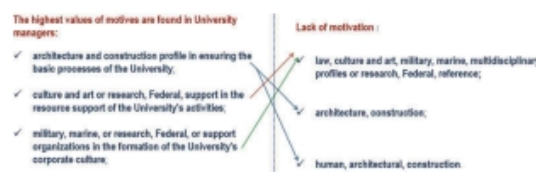


Figure 1. Motives for the emergence of educational requests among university managers.

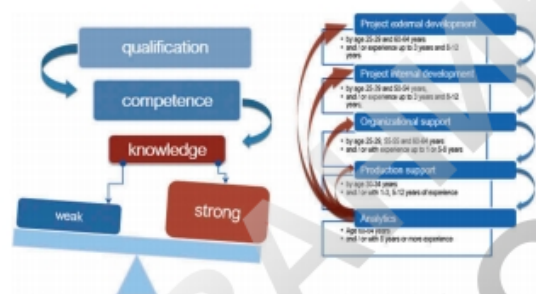


Figure 2. High-level profile of university managers of various profiles.

solution of which ensures the functioning of the organization (Pucciarelli, F., & Kaplan, A., 2016).

Thus, professional interactions of managers are now formed on the basis of project-functional interactions and the high productivity of specialists in this area is the basis for the effective functioning of the university (Verkhovskaia, I. & Prikot O., 2018), therefore, it is advisable to form, based on the identified "strong" knowledge of managers (Figure 2).

5 CONCLUSIONS

Changes in the organizational and economic foundations, the rules for the functioning of the education system and the implementation of educational activities, the transition to effective project activities, the complication of the information and communication environment, contributes to the formation of educational requests associated with a lack of qualifications in professional activities.

It should be noted that in the innovative and informational era, knowledge management has become an integral part of the strategic management of an organization. To ensure the interaction of employees and related units as a unified management system, there is a need for communication in order to transfer information or knowledge to each other, since the formation of qualification deficits is based on either the lack of accuracy of the information received, or statok of knowledge.

The data obtained allow us to conclude that a middle-level manager, despite the fact that he is objectively involved in the deep processes of essential changes, is forced to react in everyday

professional activity rather to external evidence of changes that do not always adequately reflect their essence.

Also, as a result of the study, evidence has been obtained of the active involvement of university middle managers in the above-mentioned deep changes in the nature of management activities. This is evidenced, first of all, by the change in the essence of their professional interactions and the growing tendency of "managerialization", that is, the strengthening of the role of the manager in the implementation of strategies and procedures of strategic management, which are characterized, at the same time, by the restructuring of the functions of managerial levels, divisions and departments, the introduction of a system of strategic and target planning based on formalized quantitative and qualitative performance criteria.

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