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Interaction between Factors of Activities and Culture of Teachers as an Integrated Resource for the Development of the Educational Process in Vocational Schools and Colleges

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Abstract

The subject of this study is the development of activities and culture of teachers. These are major resources for the development of the educational process in vocational schools and colleges. The target group for the experimental study included teachers of vocational schools and colleges in St. Petersburg. The study has shown that the interaction between activities and culture of teachers at the level of educational institutions is a complex structured phenomenon embracing socio-economic relations in society, organizational relations within an educational institution, competence-related characteristics of teachers, and personal qualities of an education actor. As these parameters determine the resource potential for the development of vocational schools and colleges, they can be used to improve the effectiveness of the modern educational process.

Keywords: the activities and culture of the teacher, factors of development activities and culture teachers

Introduction

The relevance of this study is based on the fact that although the development of education in Russia has been repeatedly discussed over the last fifteen years, in particular in the recognized Russian scientific journal Sociological Studies, which

is part of the international databases of *The Scopus* and *The Web of Science* magazines, the discussion has mainly concerned general, secondary and higher professional education (Gendin, Sergeev, 2000; Zborowcki, Kovrova, 2000; Scheglova, 2006; Ziyatdinova, 2010; Il'in, Schabunova, Leonidova, 2012; Gasparichvili, Krugalin, Kruchmaleva, 2013; Chagurov, Octapenko, 2014, etc.). To our knowledge, issues pertaining to the interaction between factors of activities and culture of teachers of industrial and engineering schools and colleges have not been specifically addressed as a separate subject of social studies in recent years. However, in contemporary Russian history, beginning with the 1990s and ending in 2015, this area of education saw a number of developments, such as the updating of training programs, an increasing degree of informatization and computerization of the educational process, and the expanding deployment of information and communication technologies. At the same time, economic and social reforms have changed the relations of vocational schools and colleges with the real production sector, modified social, functional and personal relationships between teachers within educational institutions, expanded and diversified requirements for the content and quality of teachers' professional activities, etc.

Given their social, organizational and personal nature, these factors have had, and continue to have, a complex impact on changes in the activities and culture of teachers and their interactions with each other. In this context, it has become relevant to understand, through research, how the interaction between factors of development of activities and culture of an education actor is structured, and in which way these phenomena are connected with the operation of educational institutions against the background of the critical social and economic conditions in today's civil society in Russia.

The Characteristics of the Object and the Sampling of the Study

The object of the research are the teachers who work in the secondary vocational schools and colleges of Saint Petersburg. The study used a geographically-nesting sampling. To ensure the representativeness of the selective number of teachers, the following criteria were used as the requirements to the procedure of respondent selection: 1) a professionally-industrial criterion reflects the main occupations and industries of the city economy, which educational organizations are closely associated with; 2) a criterion which allows for fixing the status of the educational institutions, their division into secondary vocational schools and colleges; 3) the

territorial criterion allows to take into account the specifics of the city division into the center and the periphery, the industrial and residential areas while selecting the educational institutions (it is hypothetically assumed that the territorial location of the educational institutions has some impact on the contingent of the teachers and students, therefore it was necessary to cover all the main districts of Saint Petersburg with the experiment); 4) gender - demographic criteria allow for reflecting the gender and the age ratios peculiar to the pedagogical community of the secondary vocational schools of the city; 5) the criterion of the typicality of the respondents gives the opportunity to examine the typical teachers of the selected educational organizations, including all of their specializations - from the disciplines of science and humanities to special vocational subjects. This choice of the object of the study was motivated by two circumstances. Firstly, by the fact that since the pre-revolutionary, soviet and post-soviet period St. Petersburg has been an important center of the innovative development of vocational education of the Russian youth. Secondly, by the fact that “sociology for secondary vocational education”, as compared to “sociology of education”, has its own subject and object of research. In the survey (2015), which was based on a territorial selection of respondents, 583 teachers were interviewed. The sample consisted of 11 to 12 % of the total number of teachers engaged in secondary vocational schools in St. Petersburg (at the time of the survey, their average annual number in the city was about 5,000 people). Female teachers accounted for 87.3 % of the sample, and male teachers accounted for 12.7 %. The average age of the respondents was 47.8 years. 81.0 % of the teachers had a university degree; 15.4% had secondary vocational education; and 3.6 % of the teachers (mainly training officers) had primary vocational education, including shop training. In our opinion, this selection of respondents in our experiment allows for an analysis of the interaction between their activities and culture as resources for the development of the educational process in vocational schools and colleges.

Research Purpose and Problem

The purpose of the study was to identify a set of factors of activities and culture of modern teachers that serve as resources for the development of the educational process in vocational schools and colleges in a modern metropolis.

The goal of the study was to reveal the complex structure of the interaction between factors of development of the activities and culture of teachers in modern vocational schools and colleges.

Study Method

When studying the teachers' activities, we proceeded from the fact that by teaching and educating their students, teachers not only shape the students' personalities, but also develop themselves as active actors of the educational process (Il'enkov, 1997, p.143; Lucacs, 1991, pp. 78–79; Rubinstein, 1997, p. 438). We believed that when studying activities of an education actor it was very important to give due consideration to their ensemble nature. It is particularly important that teaching and educating activities of teachers in vocational schools and colleges are closely related to modern market institutions of society, and to the process of training and educating professionals who should have command of modern production, technology and labor culture.

The concept of “culture of a teacher” was the second key concept in our experimental study. We proceeded from the fact that the backbone of the teacher's culture consists in values and human characteristics of his/her personality. These included indicators of aesthetic and artistic development, values, ideals, worldview positions, the meaning of life and the moral standards of the teacher. We believe that the latter determine the relationships of the teacher with students and their parents, with his/her peers, etc. According to a few authors, the internal architectonics of the culture of an individual (including a teacher) inevitably disintegrates without this axiological and humanistic dimension (Stolovich, 1999, p.106; Yadov, 2006, p. 37).

To develop the paradigm, we relied on the theoretical principles of social psychoanalysis (Fromm, 1990), the theory of frames (Goffman Erving, 2004), and the concept of social dispositions of an individual (Self-regulation and forecasting, 2013). They gave an opportunity to select the special complete units of the cognition of the educational activity as the subject of the scientific analysis – the positions and meanings contributed by the subject in its content and purpose, thus categorically labeling the particular self-measurement of the activity and culture of teachers. Basing on the positions and meanings of the activity, we managed to approach the disclosure of the structure of the relationships between the factors of its development and the factors of the cultural development of the subject of education in a fundamentally different way: not to go from the material elements and functions to the positions and the meanings of the activity, but to move from the historically and socially determined positions and meanings of the activity and culture of the subject of education to the individual functions and specific duties of the teacher. This reverse logic in studying the activities and culture of an education actor enabled us to present them as phenomena imbued with the emer-

gent properties of their positions, meanings, roles, targets, the level of complexity of work and opportunities for personal improvement. In terms of methodology, the analysis of positions and meanings provided a basis for identifying a single set of factors that determined the interaction between the activities and culture of an education actor.

In our opinion, using this logic of the study of the development of the activities and culture of teachers is particularly important due to the following: the position- and meaning-related perspectives of investigating different areas of professional activities of an individual are in line with modern integration trends in the development of professional labor and human capital as resources for improvement in various spheres of the life of society, in particular the improvement of educational practices pursued in vocational schools and colleges.

Methodological Tools of the Research

In our research we used a method of sociological poll. The poll gives the opportunity to explore the aspects of life of the teachers of secondary vocational schools and colleges concealed from official statistics. For its performance, an authorial multi-purpose questionnaire was used. It included 70 questions and 459 single indicators, which allowed for describing: “the teaching profession,” “the teaching process,” “the reforms in the country,” “how teachers spend their leisure time,” “the prospects of the schools and colleges development,” “teachers’ life plans and values,” and “teachers’ family status and living standards “. The analysis of the teachers’ answers on these issues allowed for conducting multilateral research not only on their activities and culture, but also to assess the characteristics of their relationship to social, economic and political structure of society, to the internal educational environment of the vocational schools and colleges. When processing the results of the poll we used standard statistical procedures: classification and grouping, calculations of averages, correlation and regression methods, and factor analysis, based on the calculation of adjusted coefficient of multiple determination (R^2). In particular, the calculations of the coefficient of determination R^2 allowed for explaining the variation of the resulting characteristic “y” (e.g., the overall level of the teachers’ activity and culture development), by computing changes in the independent features « $x_1, x_2 \dots x_n$ » (relating to the social and educational environment, the qualities of the teacher’s personality recorded during the study with the help of the indicators of the questionnaire). Analysis of the responses to the educators’ questions of sociological profiles allowed us to determine the

factors influencing the overall level of development of their activities and culture. Sociological data processing was carried out using the statistical package SPSS for Windows.

Study Results

At the beginning of the research, we hypothesized that in terms of development and interaction factors, the teachers' activities and culture must depend both on the conditions found in a particular educational institution and on the personal characteristics of educational process actors. When putting this hypothesis forward, we assumed that the social, economic and political changes in society must be refracted through the positions and meanings generated by a particular education actor, through the system of their knowledge and competences, through their life experience and value orientations, through their attitudes to the social reality and their profession, and through their attitudes to themselves.

Because of the multiplicity of the factors determining the interaction of the activity and culture of the teachers, we focused our attention on those factors, the sample correlation coefficients of which (with the positional and semantic character) were statistically similar (error within 1%) to the values that are characteristic of the general sample of the study.

Factors determining the position- and meaning-related structure of the activities and culture of teachers as resources for the development of the educational process

At the beginning of our analysis, we developed a structure of positions and meanings that substantially determined the nature of the interaction between the activities and culture of an education actor. In particular, the positions of teachers were divided into two groups as follows: communicative and role-based positions and personal positions of an education actor. In their pure form, these were found in 9.9% and 31.9% of the respondents, respectively. The remaining 58.2% demonstrated different combinations of these positions. The meaning-related characteristics were also divided into two groups. The first group included characteristics with negative connotations determining the activities and culture of the teachers. These were predominant among 24.4% of the respondents and included "activities as a means of survival and commodity", where all the efforts and culture of an education actor are driven by the need for financial security; "activities as a characteristic indicating a low social status of the teacher" and "activities as

a routine” that prevent the education actor from revealing their spiritual needs and capabilities. The second group included meaning-related dominants with positive connotations in the activities and culture of teachers. These were found in 75.6% of the respondents and included the following: “activities and culture of the teacher by improving which the education actor becomes involved in the development of society and young people,” “activities of the teacher as an area of their personal and cultural development,” and “activities that are seen by the education actor as equal to art”.

The following stage of the study involved the calculation of the adjusted coefficient of multiple determination R^2 , which shows the percentage of variations of dependent variable “ y ” described by change in independent variables “ $x_1, x_2 \dots x_n$ ”. It was used to identify a group of factors that had a substantial influence on the overall level of development of activities and culture of the teachers. In particular, the overall level of development of activities of the teachers was influenced by the following groups of factors: characteristics of pedagogical activities (42.9% of the total variation of the development of activities), the teachers’ values and ideals, including their political and civil positions (35.5%), professional and humanitarian competences of the education actors (11.8%) and factors of the organizational culture of the educational institution (9.8% of the total variation of development). In turn, the development of the teachers’ culture was influenced by the following factors: the teachers’ qualifications (29.5% of the total variation of development), characteristics of pedagogical activities (27.2%), the teachers’ values and ideals, including their political and civil positions (31.1%) and factors of the organizational culture of the educational institution (10.2% of the total variation of development).

The collected sociological data allowed for uncovering the determination of the teachers’ cultural development. Their analysis showed that the determination of the teachers’ cultural development had three levels. On the first level, it is related to the change of the positions and purposes of the teachers’ professional activity, enhancing its methodological equipment and reducing the non-core workload. On the second level, it is determined by the control system, the relations that develop between the teachers regarding training and education of students inside the secondary vocational school and college. On the third level, the determination of the teachers’ cultural development, based on the elements and relationships mentioned above, determine their “personality” (via creative leisure time organization, value and aesthetic self-determination of the teachers), “professionalism” (through the change of the economic interest, vocational and humanitarian competences and professional maturity of the teachers), “civil position” (through the inclusion

in the corporate culture of the educational institution, through the development of the political, moral and spiritual orientation of the teachers).

The interaction between factors of development of activities and culture of teachers as resources for the development of the educational process

We selected 19 individual factors to study this phenomenon. They reflect the strongest and most robust correlations between the factors of development of the activities and culture of the teachers (with an error of 1% from the values typical of the general survey sample). These were organized into two sets of factors. The first set included factors of change in the teacher's activities. They reflected their attractiveness to the teachers in terms of their social utility, their personal development, communication with young people, the teachers' ability to develop creative interests in young people, their perception of their profession as an art, their social self-determination, the competitive nature of training and educational activities, the respondents' capability of discovering something new in their teaching profession, and the presence of mutual respect in relations between team members of the educational institution. The second set included factors of change in the teacher's culture. They reflected the teachers' value-related attitudes toward self-development, manifestations of their proactive life philosophy, creativity in their work, availability of strategic thinking in building their training and educational process, their communicative culture, and their artistic and aesthetic interests. In addition to the above, this set also included the following factors: perception of competition and private property as mechanisms and important social institutions of modern society and a degree of authoritarianism in the organization of the teachers' professional activities.

The above characteristics enabled us to conduct a cross-correlation analysis of the interaction between the two groups of factors of development of activities and culture of the teachers. The analysis identified holistic (in terms of strength and reliability) factors of development of the activities and culture of the teachers (the reliability of these for the survey sample was measured with an error of 1% against the general population). This enabled us to reveal the holistic nature of the factors of the interaction between the activities and culture of the teachers and to identify latent aspects of the interaction that determined the activities- and culture-related resources for the development of the educational process both within and outside of the vocational schools and colleges.

The study of correlations between the selected factors of development of activities and culture of the teachers showed that the general fundamental factor-based

constant is their ability to think in a paradoxical, talented and creative manner. This factor was found to be significantly associated with the overall level of development of the activities of the teacher ($r = 0.187 \pm 0.002$), with the teaching activities as an area of development of the teacher's personality ($r = 0.193 \pm 0.002$), with the overall level of development of the culture of the teacher as an actor of the educational process ($r = 0.538 \pm 0.005$) and with the self-development of the teacher as part of their value system ($r = 0.364 \pm 0.004$).

For the first time in the study, with a high degree of reliability, we managed to structure the determination of the development of the activity and culture of the teachers of secondary vocational education as a difficultly organized object-subject complex of important factors: they defined not only its different levels, but also its interdisciplinary character. In particular, the statistically reliable ($P = 0.01$) results of our study allow us to say that the interaction of the activity and culture of the teachers is latently determined by a complex set of factors. In addition to the subjective factors, a significant role for the development of the activity and culture of teachers is played by the factors that represent *social and economic relations in society* (perception of competition and private property by teachers as fundamental mechanisms and institutions for the development of civil society), *organizational relations within the educational institution* (positions and relations between education actors in an educational institution), *professional competence-related characteristics of teachers* (the teacher's ability to build their teaching and educational process in a paradoxical and creative way) and *value-based personal qualities of an education actor* (these are associated with the social and pedagogical mechanisms in the teacher's self-development and reflect social and axiological characteristics of their activities, personal meanings, values and ideals). The above aspects reflect the cross-disciplinary nature of factors of reciprocal changes in teachers' activities and culture as resources for the development of the educational process in vocational schools and colleges.

The data from the opinion poll revealed facts indicating that the influence of social and economic macro-factors on the interaction between the teachers' activities and culture within an individual school or college is relatively weak compared with the other sets of factors. This has both a purely mathematical and sociologically meaningful explanation. Mathematically, the nature and parameters of the influence of macro-factors on the interaction between the activities and culture of the teachers can be correctly explained by Lyapunov's theorem. It states that if a random variable results from a number of factors, none of which is predominant, and the number of these factors tends to infinity, then the random variable distribution law asymptotically tends to the normal distribution law and

the correlation coefficients tend to their minimum. In terms of sociological meaning, this means that relatively weak yet statistically reliable correlations indicate that the factors in question are equally motivating, but weakly differentiate society actors (including teachers of vocational schools and colleges) by their level of development (Sztompka, 2005, p. 542; Zdravomuslov, Yadov, 2003, pp. 44–45).

Conclusions

Our experience studying the factors of interaction between the activities and culture of the teachers as resources for the development of the educational process in industrial and engineering schools and colleges shows that the interaction can only be productive if it is comprehensively based on economic, sociological, cultural, psychological and pedagogical theories and explanatory paradigms.

This comprehensive analysis embracing multiple disciplines should be, first of all, based on the fundamental laws of economic competition and institutions of private property in modern civil society. The latter are the fundamental components of the functioning and development not only of the whole society, but also of education, including the activities and culture of teachers of industrial and engineering schools and colleges.

The same can be said about the influence of changes in the social structure of society on the processes of continuous renewal of vocational education, which latently relies on the laws of development and factors of interaction between material and non-material production, on the evolution of social and functional relations, on the development of the activities and culture of teachers within vocational educational institutions, and on the laws and guidelines for the development of a new type of education actor who has begun to take shape and will undoubtedly be the dominating type in the current century.

In conclusion we note the following: statistical dependencies represented in the article do not show all the root causes of the interrelated development of the activity and culture of modern teachers, but, in our opinion, they can serve as a base for other studies, including those of a comparative character, to introduce new working hypotheses, to find the causes and dependencies, which have, from the European point of view, a broader meaning.

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