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Personal and Regulatory Resources in Achieving Educational and Professional Goals in the Digital Age

SELF-REGULATION OF PROFESSIONAL ACTIVITY IN THE PROCESS OF PERSONAL PROFESSIONAL DEVELOPMENT

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Abstract

The article is devoted to practical and theoretical issue of conscious self-regulation of professional activity and its development. The purpose of the study is to identify patterns of development self-regulatory procedural subsystem of the surgeon's activities at different professional stages. The methodological basis of this research is the psychological theory of conscious self-regulation, developed by Konopkin and his colleagues. Self-regulation is defined as a structural-level metasystem, consisting of general and special regulatory resources and capabilities. The research is identified the qualitative, quantitative and structural patterns of development self-regulatory procedural subsystem. The cyclical development of self-regulatory procedural subsystem is revealed, which indicates a change in the leading trends in its formation and realization. A critical or transitional point in the development of the self-regulatory procedural subsystem of the surgeon's activity, which falls on the professional experience of 20 years, is determined. The constructive, stagnation and destructive trends in the development of the self-regulatory procedural subsystem of the surgeon's activity are analyzed. It is defined that constructive development lies in active growth of the self-regulatory procedural components and the formation of its effective structure. Stagnation and destructive development are manifested in a stabilization and decrease of the self-regulatory procedural components and in destruction of its structure.

Keywords: Self-regulation of professional activity, regulatory resources.

1. Introduction

In psychology various types of psychical self-regulation are investigated. In particular, in Russian psychology are studied: the self-regulation of behavior, activity, vital functions, the self-regulation of mental processes and conditions, the self-regulation of normative and extreme states, etc. (Subject and personality in the psychology of self-regulation, 2007).

In foreign studies the problem of self-regulation is considered at certain ages of students and within the framework of various learning problems (Silkenbeumer et al., 2018; Tseng et al., 2019; Zachariou & Whitebread, 2019), the context of individual professional problems (Gottschling et al., 2016).

2. Problem Statement

In this article, we will focus on the conscious self-regulation of professional activity. This problem was consistently developed in the writings of Konopkin (2007) and continues to be developed in the studies of his colleagues (Morosanova, 2017; Morosanova & Bondarenko, 2015; Osnitsky, 2018; Prygin, 2018).

How do the concepts of "activity" and "self-regulation" relate to each other? Konopkin (2007) writes that "the concepts of "activity" and "self-regulation" emphasize different planes, without observing the aspects of studying active human activity. All these concepts are phenomenal, as objects of psychological research" (p. 14).

This relationships indicate that self-regulation can be defined as meta-activity in relation to regulated professional activities. From the standpoint of systemogenetic theory (Shadrikov, 2007), any activity, including meta-activity, is implemented as a functional system, which includes a procedural subsystem and a subsystem of activity-important qualities.

The procedural subsystem of self-regulation of activity is described in detail in the works of Konopkin. The components of the subsystem of regulatory important qualities are outlined in the works of Morosanova (2007) and Osnitsky (2018). However, its relationship needs to be clarified and specified. In particular, the question arises: is a system of conscious self-regulation developing in the process of professional activity and, if so, in what way is this development manifested?

In the literature we could not find a convincing answer to this question.

3. Research Questions

The main hypothesis of research: a system of self-regulation of activity evolves in the process of professional development in accordance with the specifics of regulated professional activity.

4. Purpose of the Study

Therefore, the purpose of our study is to identify the development trends of conscious self-regulation of professional activity at different stages of the individual's professional life.

5. Research Methods

5.1. Respondents and Method

The participants of research were 60 surgeons of various professional experience (from one year to 40 years).

To research the development of conscious self-regulation of activity we used the questionnaire developed by Morosanova and Bondarenko (2015) "The style of self-regulation of behavior – SSB" (SSB-98). The technique allows you to research the components of self-regulatory procedural subsystem and the subsystem of regulatory important qualities. In the article we analyze the development only the self-regulatory procedural subsystem, which plays a leading role in the development of the self-regulation system. It includes the following components (processes): planning (Pl), modeling (Mo), programming (Pr), evaluating the results (for convenience, we will call "self-control" (Sc).

5.2. Main Indicators

Professional development, as was shown in our previous works (Povarenkov, 2017), is a specific form of personality changes and professional activities that occur at different stages of the professional path. Professional experience is a temporary parameter of professional development.

During the analysis the following indicators were used:

- the effectiveness of professional activities;

- professional age (professional experience);

- the level of the 4 components of the self-regulatory procedural subsystem and their change depending on the professional experience;

- the average indicator of the self-regulatory procedural subsystem and its change depending on the professional experience;

- integrativity of the procedural subsystem and its change depending on professional experience.

In organizing empirical research and analyzing the results we divided all respondents into two groups; the basis for the selection was the professional experience of surgeons.

The effectiveness of surgeon's professional activities was studied using the method of expert assessments.

6. Findings

The development indicators of the self-regulation system are its qualitative, quantitative and structural changes with an increase in professional experience of surgeons. In this case, we can talk about constructive changes that are accompanied by an increase in the efficiency of professional activity and destructive ones, which may be associated with a decrease in efficiency (Povarenkov & Tsymbalyuk, 2020). Statistical means of identifying such changes is a correlation analysis (fixing linear relationships between professional experience and the development of the self-regulation system) and regression analysis (determining non-linear relationships and the influence of professional experience on the development of a self-regulation system).

6.1. Research Results

Table 1. The correlation of the components of the procedural subsystem of self-regulation of surgeons with professional experience

Components of Self-regulation	Correlation coefficient	Significance
Planning	0.49	p < 0.001
Modeling	0.18	not significant
Programming	0.22	not significant
Self-control	0.30	p < 0.05
Average indicator of the procedural subsystem	0.33	p < 0.01

From table 1 it can be seen that the processes of planning, self-control and the average development indicators of the self-regulatory procedural subsystem are significantly and positively correlate with professional experience. This means that with the growth of professional experience, these indicators of the self-regulation subsystem also increase.

The absence of significant correlation between experience and modeling, programming only means that there are no linear relationships between them, but perhaps there are nonlinear ones. To clarify the obtained data and verify the assumptions made, we turn to the results of the regression analysis, presented in Figure 1.
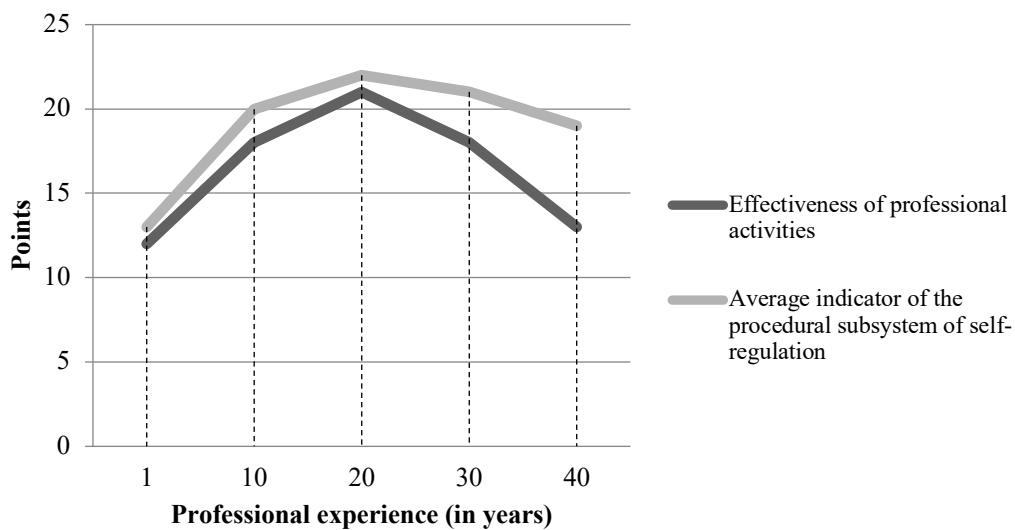

Figure 1. Change in the average indicator of the self-regulatory procedural subsystem and the effectiveness of surgeons with increasing professional experience

The data presented in table 2 indicate that for surgeons with professional experience of less than 20 years, almost all components of the self-regulatory procedural subsystem are significantly and positively associated with the growth of professional experience. The same can be said about the effectiveness of professional activity.

We find opposite results for surgeons with more than 20 years of professional experience. They did not reveal significant correlation between the components of the self-regulatory procedural subsystem

and indicators of professional experience. And the effectiveness of professional activity demonstrates a significant negative relationship.

These data statistically confirm the results of a regression analysis (Figure 1), which indicate that the experience of 20 years is a turning point for surgeons both in terms of developing a system of self-regulation, and in terms of changing their effectiveness.

Table 2. The correlation of the components of the procedural subsystem of self-regulation of surgeons with professional experience at different stages of the professional path

Components of Self-regulation	Experience less then20 years		Experience more than 20 years	
	Correlation coefficient	Significance	Correlation coefficient	Significance
Planning	0.55	$p < 0.001$	0.24	not significant
Modeling	0.22	not significant	- 0.06	not significant
Programming	0.41	$p < 0.01$	0.20	not significant
Self-control	0.32	$p < 0.05$	0.01	not significant
Average indicator of the procedural subsystem	0.42	$p < 0.01$	0.01	not significant
Effectiveness of professional activity	0.46	$p < 0.01$	- 0.34	$p < 0.10$

We consider the structures of the self-regulatory procedural subsystem that have been identified for surgeons with less than 20 years and more than 20 years of professional experience. The correlations are presented in Figure 2.
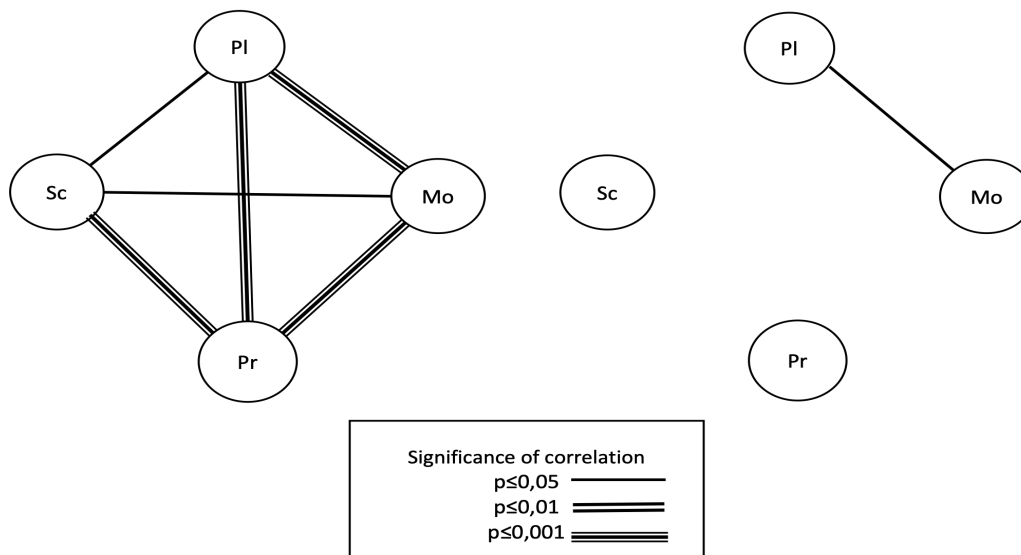

Figure 2. Correlations of the procedural substructure of surgeons self-regulation with experience of less than and more than 20 years

A quantitative analysis of correlations in the self-regulatory substructure showed that their integrativity for surgeons with less than 20 years of experience is 15 conventional units (the sum of positive relationships between components), and for surgeons with more than 20 years of experience – 1 conventional unit. The dynamics of the substructures is well illustrated in Figure 2.

The figure 2 shows that the self-regulatory procedural subsystem not only decreases quantitatively, but also is destroyed structurally. After 20 years of professional experience, most of the connections between the components of the self-regulatory procedural subsystem are lost and this is accompanied by a decrease in the professional effectiveness of surgeons.

6.2. Discussion of the Results

The results of the empirical study, in general, confirm the hypothesis that the self-regulatory procedural subsystem of the surgeon's activity evolves in the process of their professional development.

The development of the self-regulation is not monotonous and unidirectional. Its structural, stagnant and destructive stages are distinguished. The constructive development of surgeons, on average, is fixed in the professional experience from one year to 20 years (of course, there are individual variations).

During this period, there is a quantitative increase in the individual components of the self-regulation, specific for each of them: the planning process is growing fastest, and the modeling process, practically, remains at the same level. A stable structure of the self-regulation is being formed due to the identification of significant correlation between its components. There is a fast increase in the level of efficiency of professional activity.

Thus, in the first twenty years of independent work, surgeons accumulate, systematize their regulatory resources through the development of planning, programming, and self-control processes, by building the structure of the self-regulatory procedural subsystem. Perhaps these changes contribute to the growth of the effectiveness of their professional activities.

Surgeons with professional more than 20 years of experience initially show stagnant trends in the development of the self-regulatory procedural subsystem, and then destructive ones. This is expressed in the fact that the components of the self-regulation subsystem stop growing, stabilize at a certain level and gradually begin to decline with increasing professional experience. The rate of such decrease for each component of the subsystem is different. The differentiation of the components of the subsystem is increases fast. The formed structure of the self-regulatory procedural subsystem begins to collapse, which is accompanied by a decrease in the efficiency of professional activity. It should be emphasized that the destructive trends in the development of the self-regulatory procedural subsystem are manifested at the level of changes in its structure. All these changes indicate that after 20 years of independent activity, surgeons begin to gradually reduce and lose their regulatory resources, which ultimately can lead to complications in the realization of professional activities in general.

7. Conclusion

1. The self-regulatory procedural subsystem of surgeons actively and monotonously evolves in the process of their professional development. Qualitative, quantitative and structural changes occurring during the development of the self-regulatory procedural subsystem are associated with an increase and decrease in the effectiveness of the surgeon's professional activity.

2. The development of the self-regulatory procedural subsystem in the process of professional activity takes on an explicit cyclic form. About 20 years, which can be called critical or transitional point, the opposite trends in the professional development of surgeons are observed.

3. The author identifies constructive, stagnant and destructive trends in the development of the self-regulatory procedural subsystem of the surgeon's professional activities. Constructive development is observed at surgeons with less than 20 years of professional experience. Stagnant and destructive development trends are manifested at surgeons with more than 20 years of experience. There is an increase in the components of the self-regulatory procedural subsystem and the formation of its structure in the process of constructive development. There is a stabilization and reduction of the level of the self-regulation components in the process of stagnation and destructive development.

4. The constructive development of the self-regulatory procedural subsystem are accompanied by an increase in the efficiency of professional activity of surgeons. The destructive development of the self-regulatory procedural subsystem, during which surgeons lose their regulatory capabilities, is accompanied by a decrease in the efficiency of their professional activities. This fact indicates the influence of development of the self-regulatory procedural subsystem on the effectiveness of surgeon's professional activities.

Acknowledgments

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