# Expansion of Professional Competence of Modern Teacher in Conditions of Domestic Professional Education Updating

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**Abstract.** The studying of a process of teachers' professional competence expansion in the conditions of updating of domestic professional education was based on the checking up a hypothesis of interrelation between teachers' competences and their professional competence. Data of college teachers' poll of the Tatarstan Republic and the Republic of Mordovia in the conditions of educational standards of the fourth generation' introduction and professional standards were investigated. The technique of studying the teachers' opinion on expansion of teachers' professional competence is theoretically proved and developed. Dynamics of teaching opinion is investigated by means of the adapted didactic means, which allow one to describe quantitative and qualitative characteristics of the happening processes. The research has rather fully allowed revealing the observed unevenness of formation of innovative professional competences of the interviewed teachers. Although a self-assessment formation of the respondents of the offered competences is above an average (on a 10-mark scale), the quantitative indices define the leading role of cognitive competences. Results of the conducted research are useful for experts in the field of education and are of interest for the general public in the conditions of an innovirovaniye of domestic professional education.

## 1. Introduction

In the strategy of innovative development of the Russian Federation till 2020 "Development of personnel potential in the sphere of science, education, technologies and innovations" [1] there was the first task. V.V. Putin at a meeting with teachers and students of Moscow pedagogical state university emphasized a special role of the teacher in development of modern Russian society: "The teacher is without any doubts is the right choice in the course of life because it is impossible to construct democratic society, to create market economy. In general, nothing can be made without an educated person. And what a future citizen of Russia will be depends on the teacher" [1].

Dynamics of modern social processes sets new tasks for an education system – to carry out gradual reorganization of process of domestic education for formation of the personality with high quality of thinking, creative abilities, skills to independently acquire knowledge and on their basis to generate new knowledge, being able to produce and embody innovations. State programs "Development of education", "Development of science and technologies", "Information society" are the most important condition of ensuring activity of society in general. In the Strategy of innovative development of the Russian Federation till 2020, it is highlighted that "an education system at all stages... has to be focused on formation and development of the skills and competences necessary for innovative activity" [1].

In domestic pedagogical literature, the definition of an innovation is given as the change in the system (in - inside), which is expressed in creation and introduction of various types of innovations generating significant progressive changes in social practice.

Pedagogical innovation, acting as a kind of social innovations, represents a pedagogical innovation, purposeful progressive change, which makes the educational environment as "stable elements (innovations) improving characteristics of separate parts, components and the most educational system in general". Pedagogical innovations mark out the pedagogical ideas, processes, means, methods, forms, technologies, substantial programs, etc. [2].

Thus, the essence of the innovative process in education consists in updating and change of the concept of education, improvement of content of training, methods, ways of training and education [3]. Any innovative process in education assumes the solution of two tasks:

- studying, generalization and distribution of the best pedagogical practices;
- introduction of achievements of psychology and pedagogical science in practice.

Innovative pedagogical activity can be considered a basis of an increase in competitiveness of an educational institution and it becomes a reference point for self-development of the teacher, his professional

growth, creative activity contribute to the personal development of trainees [4]. Thus, innovative activity of the teacher has indissoluble connection with scientific and methodical activity of teachers and educational and research activity of students [5].

The comparative and theoretical analysis of foreign and domestic literature on a problem of innovative education presented in the monograph "Alternative Didactic Systems Abroad (20th Century)" shows that innovative pedagogical experience is characterized by distribution of "the pedagogical experiments which have led to the statement of the ideas of alternative education, pluralism of didactic systems, change in a conservative view on a school [6], emergence of new alternative schools "opposing themselves to authoritative education ("open schools", "schools without walls", "magnetic schools", "educational parks", "street academies", "training centers", etc. [6], and focused on a certain direction – rendering help to the student in achievement of the wellbeing by one [7-11].

Bologna Process is the most important mechanism of the European integration of systems of professional education with the installed general system of assessment of training quality [12-14] directed to formation of certain competences.

According to a formulation of UNESCO education is connected with formation of cognitive, activity, communicative and world outlook competency (see table 1).

**Table 1.** Types of competency according to UNESCO

| Competence | Characteristic |
|---|---|
| Cognitive (*learning to know*) | to learn to know – professional and methodical competence |
| Activity (*learning to do*) | to learn to do – competence of the plan of activity, the realization conceived in life |
| Communicative (*learning to live together*) | to learn to live together – social and communicative competence |
| World outlook (*learning to be*) | to learn to be – competence of the plan of the personality |

Most of scientists agree in opinion that the competence is an ability (readiness) to apply the gained knowledge, skills in a new unusual situation [15], and competence is a possession of the person of the corresponding competences, including his personal attitude towards it and an object of activity [12-15].

Now educational process proceeds in such dynamic conditions in which the teacher of system of professional education is inevitably involved in innovative activity. Development of readiness for such activity imposes new lines on the teacher's "portrait" assuming expansion of his professional competence of conditions of updating of domestic professional education. It becomes especially relevant in connection with development of such scientific direction as "engineering pedagogics" (in Europe, the society IGIP pays much attention to pedagogical provision of technical education) [16].

In our opinion, the portrait of the modern teacher is characterized by a certain set of positions (functions of the teacher [17], criteria of his professionalism [18] and kinds of activity [19], lying in formation of his professional innovative competence consisting in turn of nine competences.

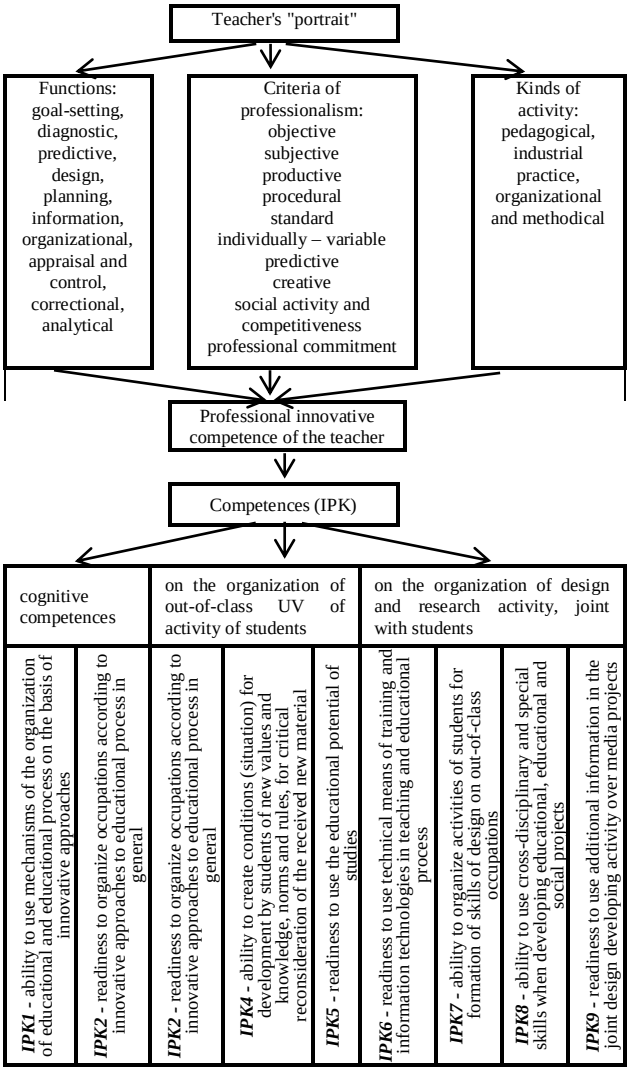



**Fig. 1.** Professional innovative competence of the teacher.

## 2. Materials and methods

Didactic means - the questionnaire which includes 3 blocks and 9 questions reflecting the positions on formation assessment has been developed for determination of the level of formation of activity abilities of teachers (competences) which are their professional innovative competence:

- cognitive competences (this block consists of 4 questions of the general character of the educational process organization on the basis of innovative approaches);
- competences in the organization of out-of-class teaching and educational activity of students (the block contains 2 questions reflecting extent of using educational potential of training material and material means);

• competences in the organization of design and research activity, joint with students (the block consists of 3 questions reflecting the organization of activities for formation of students' skills in design educational, educational, social and media-projects)

The level of readiness (ability) of teachers for innovative activity was estimated on a 10-mark scale.

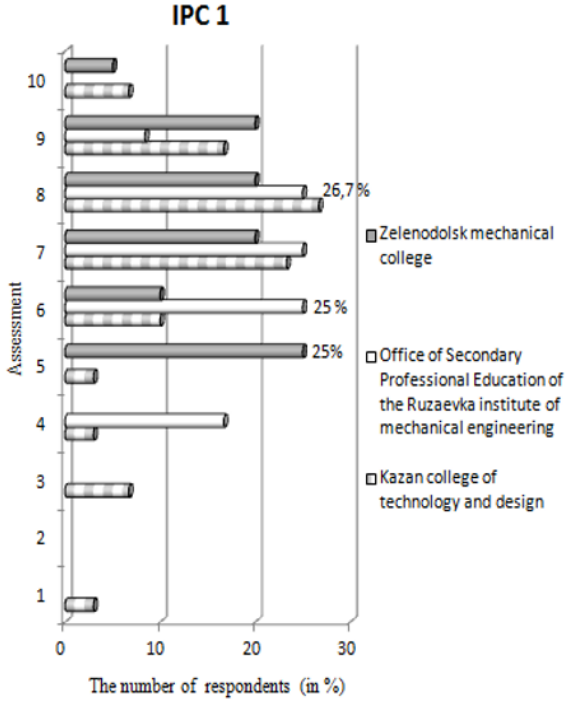
## 3. Results and discussions

The total of the respondents who took part in questioning made 62 teachers of three secondary vocational education institutions of the Republic of Tatarstan and the Republic of Mordovia.

This questioning demonstrates a rather high level of development of respondents' competences offered for consideration in the questionnaire which are a part of professional innovative competence of the teacher.

### 3.1 Formation level of respondents' cognitive competences

Characterizing the block of cognitive competences (fig. 1), it is possible to note that teachers have estimated the formation level of their competences IPK1, IPK3 (fig. 2) rather highly: 25-27% of respondents estimated formation of these competence limits at 5 - 9 points. This assessment demonstrates that possession by teachers of mechanisms of organization of the educational and educational process based on innovative approaches allows them to use actively various innovative educational technologies in practice.



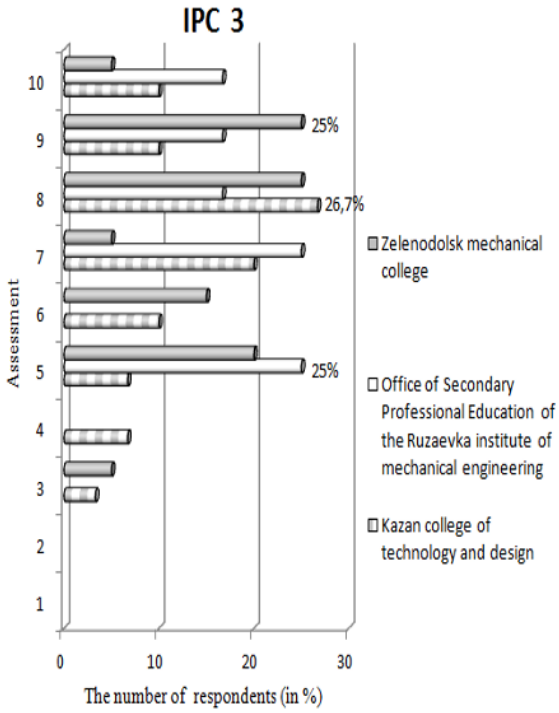
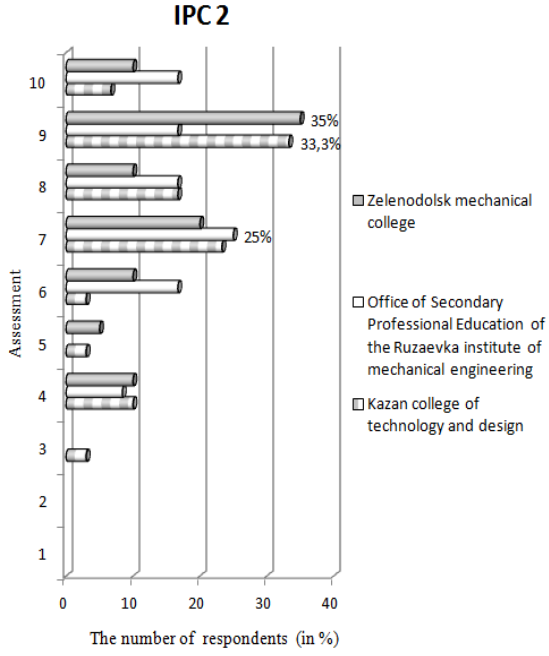




**Fig. 2.** Assessment by experts teachers of degree of IPK 1, IPK 3 formation.

Quality and quantitative indices of formation of respondents' IPK2 and IPK4 testify to a higher degree of readiness of the interviewed teachers for organization of occupations according to innovative approaches to the educational process and their ability to create conditions (situation) for development of new values, knowledge, norms, rules by students for critical reconsideration of the received new material. Up to 33-35% of respondents estimated formation of these competence limits at 7 - 9 points (see fig. 3).



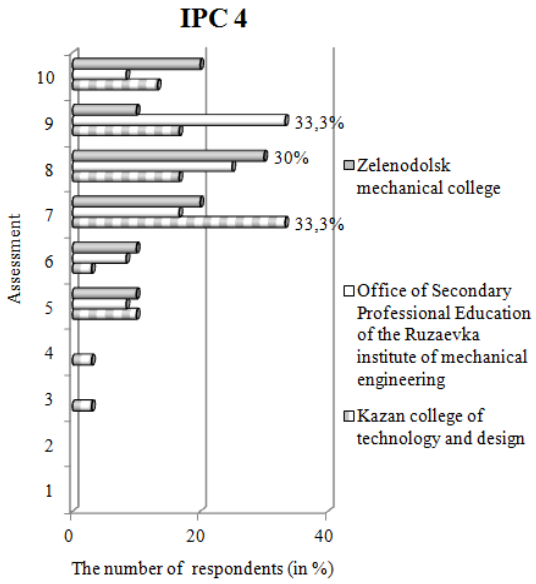



**Fig. 3.** Assessment by expert teachers of degree of IPK2, IPK4 formation.

### 3.2 Level of competences' formation in organization of out-of-class teaching and educational activity of students

As for the organization of out-of-class teaching and educational activity of students of technical colleges, it is established that teachers pay much attention to use of educational potential of studies, especially teachers of the Zelenodolsk mechanical college, of whom more than 40% have estimated the activity in this direction at 8 points on a 10-mark scale (see fig. 4a).

In the conditions of the current trend of universal use of information and communicative technologies, this questioning shows that teachers of all three colleges expressed readiness to use technical means of training and information technologies in the teaching and educational process: 20-35% of respondents estimated formation of this competence in the limits of 6 - 9 points (see fig. 4b).

### 3.3 Level of formation of competences on the organization of design and research activity, joint with students

The new educational standards integrated with the introduced professional standards [20] set other ratios regarding practice-orientedness of programs of colleges (40% - theoretical preparation, 60% - practical preparation), which implementation is impossible without direct participation of the teacher. It correlates with the data on formation assessment of respondents' IPK7 - IPK9 testifying to readiness of teachers for organizing activities of students for formation of design skills in out-of-class occupations, formation of cross-disciplinary and special skills in development educational, educational, social and media projects (see fig. 5a, c).

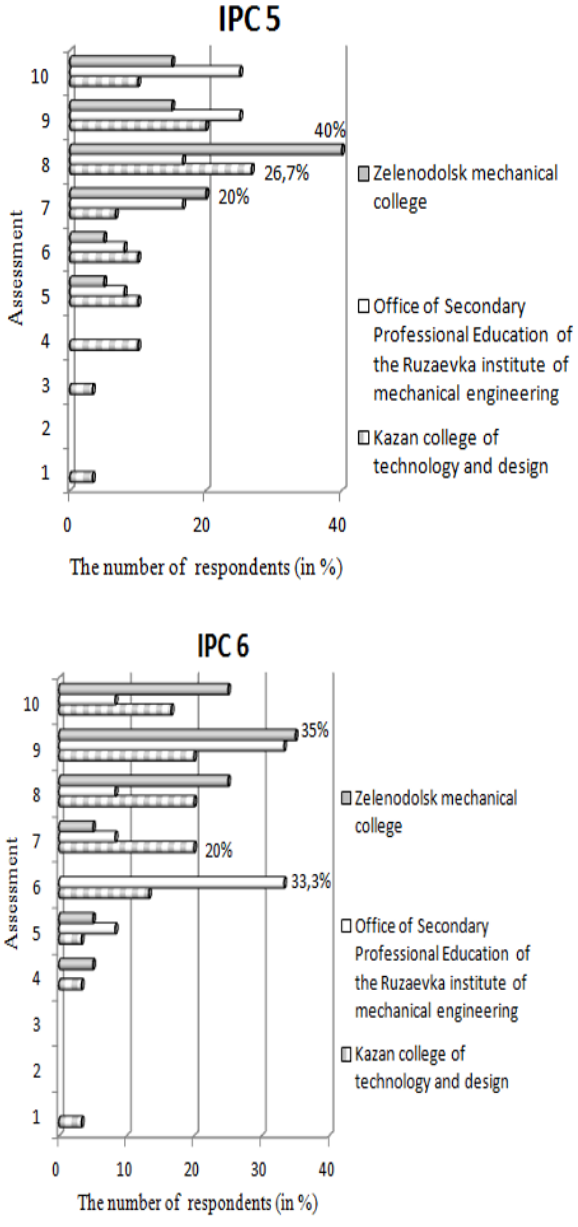
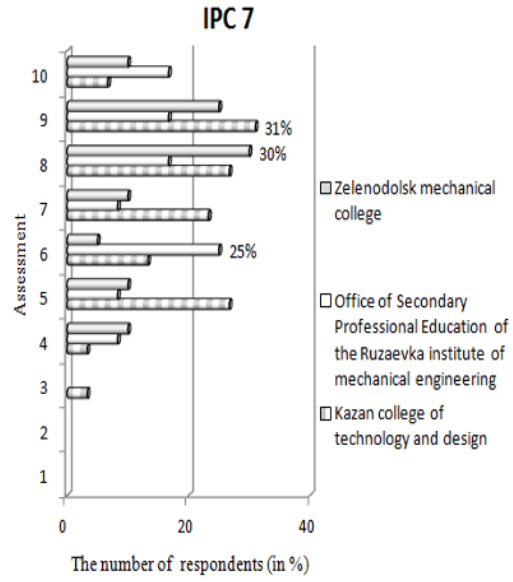



**Fig. 4.** Assessment by experts teachers of degree of formation of IPK 5 (a) and IPK 6 (b).



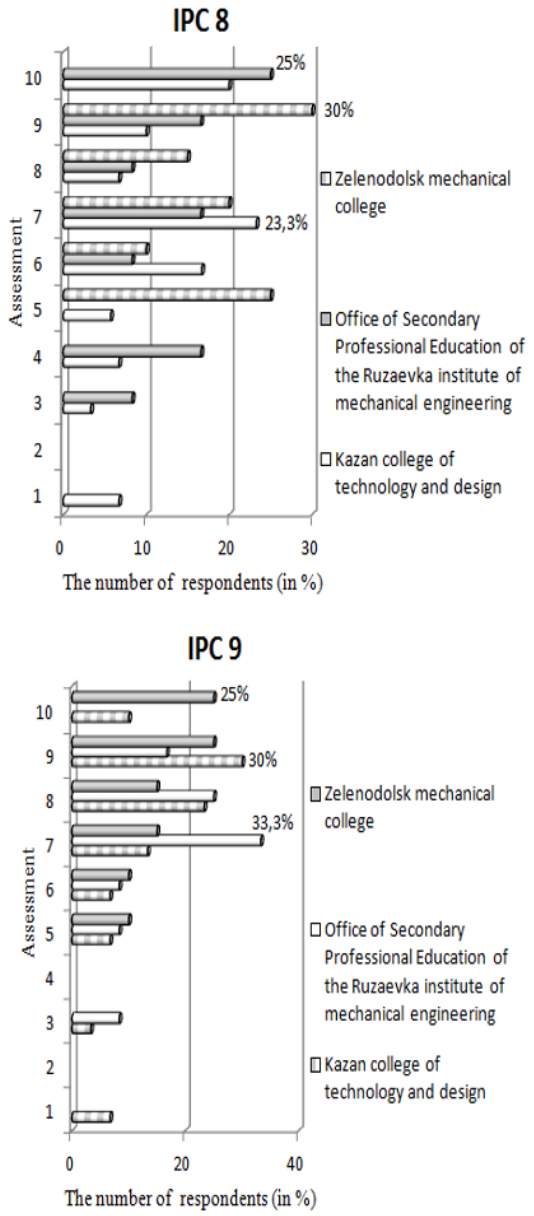



**Fig. 5.** Assessment by expert-teachers of formation degree of IPK 7 (a), IPK 8 (b), IPK 9 (c).

## 4. Conclusion

The experiment has allowed revealing the observed unevenness in formation of activity abilities (competences) of the interviewed teachers (see fig. 6).

The received average indicators of formation of all nine competences allowed one to reveal the tendency of teachers' self-assessment in formation of the offered innovative above-the-average competences (from 5 points on a 10-mark scale). At the same time quantitative indices define some leading cognitive competences (IPK1-IPK4) (fig. 6a); then competences of the third block (IPK7-IKP9) (fig. 6v) and, at last, the competences of the second block (IPK5, IPK6) (see fig. 6b) follow.

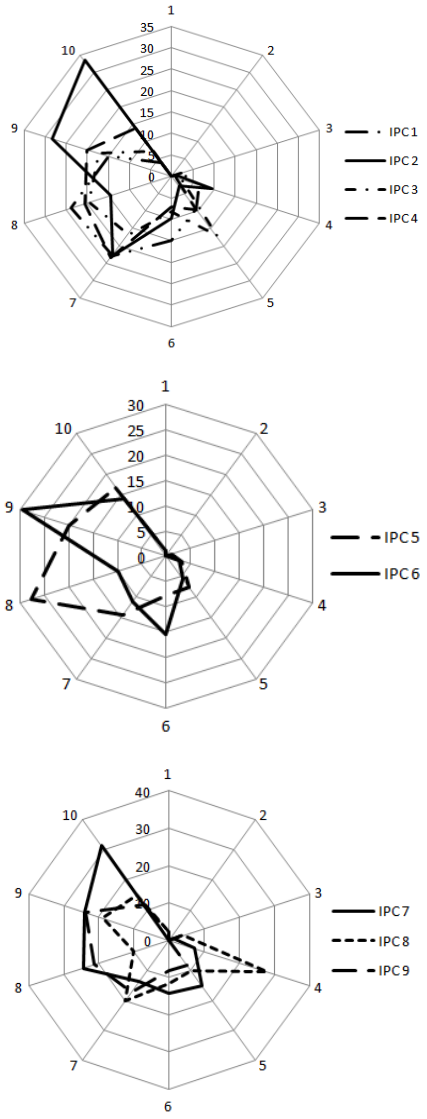



**Fig. 6.** Average indicators of formation of professional innovative competences of respondents at three colleges.

The multidimensional portrait of the modern teacher, performing a number of the listed functions with inevitable performance of pedagogical, industrial practice and organizational and methodical activity presented by us, will correspond to criteria of his high professionalism in conditions of dynamic expansion of the professional innovative competences offered by us.

It is especially relevant in the conditions of introduction of new educational and professional standards in the system of secondary professional education when there was a redistribution classroom (with direct participation of the teacher) and the independent student – 75% / 25%, for education practice-orientedness. Therefore, it can act as the main recommendation, opinion, emphasis of attention paid to uniformity of formation of the professional innovative competences (IPK1-IPK9) offered in the article.

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