

Copyright © 2016 by Academic Publishing House *Researcher*

All rights reserved.

Published in the Russian Federation

European Journal of Contemporary Education

ISSN 2304-9650

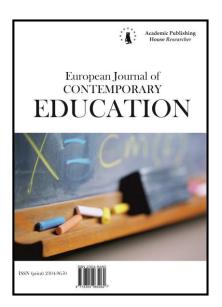
E-ISSN 2305-6746

Vol. 17, Is. 3, pp. 272-283, 2016

DOI: 10.13187/ejced.2016.17.272

www.ejournal1.com

WARNING! Article copyright. Copying, reproduction, distribution, republication (in whole or in part), or otherwise commercial use of the violation of the author(s) rights will be pursued on the basis of Russian and international legislation. Using the hyperlinks to the article is not considered a violation of copyright.



A Study of Differences in the Degree to Which Instructors are Prepared to Manage the Development of the School They Teach at

Tatyana P. Afanasyeva ^a, Irina A. Yeliseyeva ^b, Valeriy S. Lazarev ^c, Yuriy S. Tyunnikov ^a, *

- ^a Institute of Strategy for Education Development of the Russian Academy of Education, Russian Federation
- ^b Moscow Psychological and Social University, Russian Federation
- ^c Psychological Institute of the Russian Academy of Education, Russian Federation

Abstract

This paper relies on the ideas that underpin the scholarly school of developing pedagogical systems to assess the degree to which instructors are prepared to manage the development of the school they teach at. The authors propose a structural/functional model for instructor preparedness to be the subject of innovation activity, provide a relevant methodology for it, and describe the content and findings of their empirical substantiation of it. The study identifies instructor groups with a high, medium, and low degree of preparedness to manage innovation activity in a school and establishes statistically significant differences between them in terms of the degree to which the motivational, cognitive, technological, and organizational components of preparedness have been formed. The authors come up with a proof that the instructor's preparedness to be the subject of innovation activity depends on the degree of his/her preparedness to fulfill particular duties in managing this activity. The paper identifies specific factors behind the differences between instructors in this characteristic and determines the degree of their impact. The authors establish a close link between the instructor's preparedness to be the subject of innovation activity and his/her actual participation in resolving objectives in managing the school's development. The use of the authors' methodology for assessing instructors' preparedness to manage innovation activity in a school could help determine specific factors affecting it and develop individual trajectories of increase in their innovation competence, as well as facilitate their productive involvement in the process of working out the school development program.

E-mail addresses: inido-atp@mail.ru (Yu.S. Tyunnikov)

^{*} Corresponding author

Keywords: instructor's preparedness to be the subject of innovation activity, objectives in innovation activity, components of one's preparedness for innovation activity, subject of innovation activity, duties in managing innovation activity.

1. Introduction

The proper implementation of a new Federal State Educational Standard in general education requires modernizing all of the components of a school's pedagogical system: the objectives and content of educational programs, educational technologies, forms of control over educational activity, and ways to assess its results. However, research into the practice of schools' innovative activity indicates that most of them are not prepared for the systemic modernization of their pedagogical systems (Lazarev, 2014; Lazarev, 2015; Novikova et al., 2013), which in large part is due to the fact that instructors fail to become the genuine subjects of innovation activity because most of the time they tend to participate in resolving innovation issues as mere executors (Lazarev, 2013).

In order to identify and explain specific factors determining the instructor's preparedness to be the subject of his/her school's development, as well as obtain statistically significant material for conclusions about the instructor's actual participation in resolving practical objectives in innovation activity, one needs to work out and test a special diagnostic methodology. It is to the discussion of these relevant objectives that this paper is devoted to.

2. Materials and methods

This investigation is grounded in the key tenets of the theory of developing pedagogical systems (Lazarev, 2015), whereby innovation activity is a type of activity that involves effecting purposive changes in the pedagogical system that can facilitate boosting its efficiency. The development of the pedagogical system is possible thanks to its innovation potential, i.e. its ability to effect purposive changes to its components (objectives, content, technologies, forms, means, conditions for educational activity) and structure in alignment with objective needs and potential for boosting productivity and efficiency. The greater the innovation potential of the pedagogical system, the higher the caliber of innovation activity.

The authors utilized a questionnaire survey method for diagnostic data collection and a method of analysis of instructors' subjective assessments for the assessment of their preparedness to manage innovation activity.

The empirical study featured 170 instructors from Kaliningrad, Moscow, Moscow Oblast, Khanty-Mansi Autonomous Okrug, and Yamalo-Nenets Autonomous Okrug. Most of them (82 %) taught at schools of general learning at the time. There also were pedagogues from lyceums (8 %), gymnasiums (6 %), and other institutions of general learning (4 %). Each study participant assessed himself/herself for the degree of awareness of existing problems faced by the system of education as a whole and by their school in particular, preferred ways to resolve these problems, degree of motivation for participation in managing innovation activity, command of the tools needed for managing innovation activity, and degree of involvement in resolving objectives in managing the school. The school's innovation activity was assessed by them in terms of the usefulness of innovations implemented in it, educational results achieved, factors impeding its development, etc.

The authors processed the source data using SPSS Statistics 22.0 to come up with scores for each instructor and determine the degree of formedness of the cognitive, motivational, technological, and organizational components of his/her preparedness to be the subject of innovation activity, as well as scores on the integral scale of preparedness.

3. Discussion

In recent years, most of the research into the subject has focused on enhancing innovation mechanisms for educational institutions (Lazarev et al., 2015; Kharisova & Shukayeva, 2015; Afanasyeva & Novikova, 2016), developing criteria and methods for the integrated assessment of the caliber of schools' innovation activity (Kharisova & Shukayeva, 2016), assessing the impact of the caliber of the motivational environment on pedagogues' innovation activity (Alekseyenkova et al., 2015; Alekseyenkova, 2016), constructing a system of preparation of future pedagogues for

innovation activity (Tyunnikov & Krylova, 2015), and developing models for effective support for schools' innovation activity (Moiseyeva, 2015).

Psychological research has provided a rationale for the linkage between the preparedness of the pedagogical team to be the subject of the school's development, the school's current potential for engaging its teachers in the management of innovation activity, and its effectiveness (Lazarev & Razuvayeva, 2009; Lazarev & Yeliseyeva, 2015).

The achievement of objectives in innovation activity is governed by its caliber, which is construed as the relationship between actually attained results and results that are objectively desired and possible under existing conditions. The higher the school's caliber of innovation activity, which is determined by how effectively specific objectives in it are resolved, the greater the school's capacity for development.

Among the major objectives in innovation activity are: analyzing the state of educational activity and identifying the need for changes to it (identifying specific issues); searching for and perceiving specific novelties (ways to resolve the issues) with a view to effecting the changes deemed necessary; designing specific objectives for development; planning specific innovations; implementing these innovations.

The ability to resolve objectives in innovation activity is determined by: the degree to which the subject of this activity is motivated; the subject's command of the knowledge needed to be able to resolve objectives in innovation activity; the subject's command of the latest technologies for resolving objectives in innovation activity; the subject's ability to utilize the more effective forms of organizing innovation activity.

The subject of activity is characterized by that his/her own motive for this activity overlaps its socially significant (objective) motive and that he/she takes on responsibility for effecting this activity, is active in effecting it, and has a command of specific (cultural) ways, developed in society, to effect it.

Innovation activity in a school has a hierarchical structure. It can be effected on a level of the system as a whole, on a level of its sub-systems, and on a level of particular elements in a sub-system. By acting as the subject of the school's innovation activity, the instructor fulfills specific duties in managing this activity, such as determining the content and form of processes related to the school's development (determining the overall strategy for the school's development; identifying specific issues; looking for ways to resolve these issues); setting goals (projecting an image of the desired future); planning the school's development; organizing the process of carrying out specific plans; controlling and regulating the change processes).

Although every instructor can be engaged, to one degree or another, in the management of innovation processes on these levels, as the subject of innovation activity he/she will self-actualize in full measure on a level of the educational system as a whole when he/she engages in the process of resolving specific objectives for the school's development on all three levels of innovation activity. As a result, he/she develops a general insight into relevant issues facing the school, objectives in its innovation activity, and ways to attain them, with responsibility for performing portions of joint work getting distributed and assumed.

To characterize the instructor's ability to effectively resolve objectives in managing the school's development, the authors introduce the term "instructor preparedness to be the subject of innovation activity". The term reflects the degree to which the instructor's mindset with respect to engaging in the process of resolving objectives in managing innovation activity, employing specific methods for achieving these objectives, and coming up with specific forms of organizing joint innovation activity, as well as the relevant knowledge he/she possesses, matches the image of "the ideal subject of innovation activity" (Afanasyeva, 2016).

The ideal subject of innovation activity possesses the following characteristics:

- is keen to take part in managing the school's development and prepared to take on responsibility for fulfilling all duties associated with managing innovation activity (the characteristic reflects the level of the motivational/ethical component of one's preparedness to be the subject of innovation activity);
- possesses the knowledge required to resolve objectives in innovation activity (the cognitive component).
- has a command of technologies for resolving objectives in managing innovation activity (the technological component);

- is capable of teaming up with other instructors in putting together proper forms of organizing the process of resolving objectives in managing innovation activity (the organizational component).

The authors introduce the concept of "ideal subject of innovation activity" in order to put together a special scale for assessing instructor preparedness to be the subject of innovation activity. The degree of the teacher's actual preparedness to be the subject of innovation activity is determined by how far he/she is from being an ideal one.

3. Results

The term "instructor preparedness to be the subject of innovation activity" characterizes the degree to which one's mindset with respect to engaging in the process of resolving objectives in managing innovation activity, employing specific methods for achieving these objectives, and coming up with specific forms of organizing joint innovation activity, as well as the knowledge one possesses, matches the image of the ideal subject of innovation activity.

The authors assumed that the degree of instructor preparedness to be the subject of innovation activity can be determined based on its specific characteristics (the motivational, technological, organizational, and cognitive components of one's preparedness to manage the school's development), as well as based on one's preparedness to fulfill specific duties in managing this activity (identifying specific issues within the educational system, looking for specific novelties to implement going forward, planning changes to educational activity, motivating innovation activity, and controlling and regulating innovation activity). The instructor's preparedness to fulfill a particular duty in managing the school's development is formed when he/she marks this duty out among all others, becomes fully aware of its significance, and takes on responsibility for fulfilling it, having at his/her disposal all relevant information and culture-congruent means needed for fulfilling it.

Figure 1 displays the authors' model for instructor preparedness to be the subject of innovation activity, which incorporates relevant criteria and indicators for one's level of preparedness to engage in resolving objectives in managing the school's development and brings to light specific factors that determine this level.

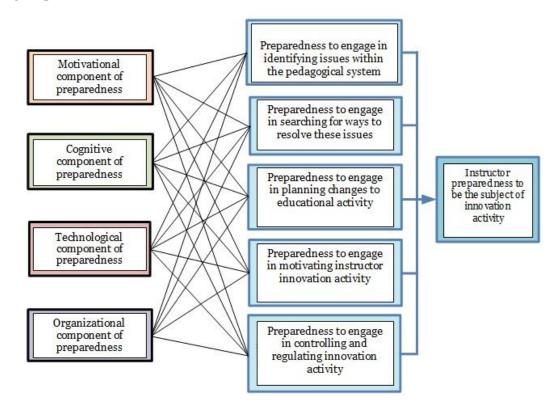


Figure 1. Structural/functional model for instructor preparedness to manage the school's development

The teacher's preparedness to be the subject of innovation activity characterizes his/her inner potential for engaging in the process of resolving objectives in managing the school's development. His/her real participation in resolving these objectives — his/her engagement in managing innovation activity — reflects the amount of effort he/she puts into resolving the various objectives in managing innovation activity and helps factor in the distribution of these efforts across particular objectives, as well as the forms and degrees of teacher participation in innovation activity.

The authors also assumed that the teacher's engagement in managing innovation activity depends on his/her preparedness to be the subject of innovation activity.

It is the verification of the above suggestions that constituted the main object of the authors' empirical study.

To resolve the study's first objective, which was determining the differences in the degree of teacher preparedness to be the subject of innovation activity, the authors marked out groups with a high (16 % of all the teachers), medium (65 %), and low (18 %) level of this characteristic. Assessing the differences between the neighboring groups using the Mann–Whitney U test indicated their significance across all the components (Table 1). The high significance of these differences led the authors to suggest, with sufficient certainty, that they are not accidental (Sidorenko, 2003).

Table 1. Assessment of the differences between teacher groups with a high, medium, and low degree of preparedness to manage innovation activity, across the components of preparedness

Components of teacher	Degree of statistical significance of differences between teachers across components of teacher preparedness to be the subject of innovation activity			
preparedness to be the subject of innovation activity	with <i>high</i> and <i>low</i> preparedness to participate in managing school development	with high and medium preparedness to participate in managing school development	with <i>medium</i> and <i>low</i> preparedness to participate in managing school development	
Motivational	0.000	0.000	0.000	
Cognitive	0.000	0.000	0.000	
Technological	0.000	0.000	0.000	
Organizational	0.001	0.004	0.002	

The differences show up in that the teacher group with a high degree of preparedness to be the subject of innovation activity is distinguished by a high degree of formedness of the motivational (90 % of cases), cognitive (95 %), and technological (86 %) components, as well as by a high (67 %) and medium (25 %) degree of formedness of the organizational component of preparedness.

The teacher group with a medium degree of preparedness to be the subject of innovation activity is mainly distinguished by a medium degree of formedness of the motivational (62 %), cognitive (56 %), and technological (44 %) components, as well as a medium (46 %), high (30 %), and low (24 %) degree of formedness of the organizational component.

The teacher group with a low degree of preparedness to be the subject of innovation activity is mainly distinguished by a low degree of formedness of the motivational/ethical (85 %), cognitive (82 %), and technological (75 %) components, as well as a low (70 %), medium (11 %), and high (19 %) degree of formedness of the organizational component.

The study also produces a proof of there being a link between the teacher's preparedness to be the subject of innovation activity and his/her preparedness to engage in fulfilling duties in managing this activity.

The authors established that the degree of the instructor's preparedness to be the subject of innovation activity is influenced the most by his/her preparedness to engage in planning innovations in the pedagogical system, preparedness to engage in identifying issues within the pedagogical system, and preparedness to engage in searching for ways to resolve these issues. By contrast, the degree of the instructor's preparedness to be the subject of innovation activity is

influenced the least by his/her preparedness to engage in controlling and regulating innovation activity (Table 2).

Table 2. Assessment of the link between teachers' preparedness to be the subject of innovation activity and their preparedness to engage in fulfilling particular duties in managing this activity

Teacher preparedness to engage in fulfilling particular duties in managing innovation activity	Value of Pearson correlation coefficient	Significance level
Preparedness to engage in identifying issues within the pedagogical system	0.708	0.000
Preparedness to engage in searching for ways to resolve issues within the pedagogical system	0.692	0.000
Preparedness to engage in planning changes in the pedagogical system	0.755	0.000
Preparedness to engage in motivating teacher innovation activity	0.653	0.000
Preparedness to engage in controlling and regulating innovation activity	0.626	0.000

According to the findings of an analysis of data obtained by the authors, the majority of the teacher group with a high degree of preparedness to be the subject of innovation activity are instructors with a high degree of preparedness to identify issues within the pedagogical system (88%), search for ways to resolve them (83%), engage in planning changes in the pedagogical system (79%); less than half of the instructors have a medium degree of preparedness to motivate teacher innovation activity (46%), and half of the teachers – to engage in the control and regulation of innovation activity.

The teacher group with a low degree of preparedness to be the subject of innovation activity includes 78 % instructors with a low degree of preparedness to engage in motivating teacher innovation activity, 70 % with a low degree of preparedness to engage in controlling and regulating innovation activity, 67 % with a low degree of preparedness to engage in identifying issues within the pedagogical system and engage in planning changes in it, and just 59 % with a low degree of preparedness to engage in searching for ways to resolve issues within the pedagogical system.

In the teacher group with a medium degree of teacher preparedness to be the subject of innovation activity, 90 % have a medium degree of preparedness to engage in planning changes in the pedagogical system and about 80% have a medium degree of preparedness to engage in fulfilling the rest of the duties related to innovation activity.

Thus, the study empirically substantiated the suggestion that it is possible to determine the degree of a teacher's preparedness to be the subject of innovation activity through his/her preparedness to engage in resolving objectives in managing this activity, as well as the supposition about the structure of teacher preparedness for innovation activity and means of assessing it.

The study's second objective consisted in identifying specific factors behind the differences in the degree of formedness of the components of teacher preparedness to be the subject of innovation activity.

A deeper analysis of the differences in the motivational/ethical component of a teacher's preparedness to be the subject of innovation activity helped establish the extent to which it is influenced by the motivational/ethical components of preparedness to engage in fulfilling particular duties in managing innovation activity (Table 3).

Table 3. Assessment of the impact of the motivational/ethical component of a teacher's preparedness to engage in fulfilling specific duties in managing innovation activity on the motivational/ethical component of his/her preparedness to be the subject of innovation activity

	Value of Pearson correlation coefficient	Statistical significance level
Motivational/ethical component of preparedness to engage in identifying issues within the pedagogical system	0.690	0.000
Motivational/ethical component of preparedness to engage in searching for ways to resolve issues within the pedagogical system	0.697	0.000
Motivational/ethical component of preparedness to engage in planning innovations in the pedagogical system	0.738	0.000
Motivational/ethical component of preparedness to engage in motivating teacher innovation activity	0.709	0.000
Motivational/ethical component of preparedness to engage in controlling and regulating innovation activity	0.687	0.000

Teachers with a high level of the motivational/ethical component of preparedness to be the subject of innovation activity are distinguished by that they are keen to take part in resolving most of the issues arising in managing innovation activity. Those with a medium degree of motivational/ethical preparedness to be the subject of innovation activity are willing to take part in resolving half of such issues and up. Lastly, teachers with a low degree of motivational/ethical preparedness to be the subject of innovation activity are willing to take part in resolving less than half or the least number of these issues.

An analysis of the cognitive component of teacher preparedness for managing innovation activity established that, based on the Mann–Whitney U test, the study's teacher groups with a high, medium, and low level of this characteristic differ most significantly (significance level $p \le 0.000$) in:

- the degree of awareness of issues within the educational system, their causes, and possible ways to resolve them on a global, federal, regional, and municipal level;
- the degree of awareness of shortcomings in the outcomes of education and the current state of the pedagogical system within one's institution, as well as of their causes, related upcoming changes, ways to engage teachers in innovation activity, etc.;
 - the degree of awareness of new pedagogical solutions available at the moment.

Within the teacher group with a high level of the cognitive component of preparedness to be the subject of innovation activity, 70% are instructors with a high degree of awareness of the current state of and issues faced by the educational system, as well as possible ways to resolve these issues, around the world, within their country, region, or their city (district), and a high degree of awareness of currently available pedagogical solutions that could boost the caliber of education if implemented. Yet, just a little over half of this group's members (56%) have a high degree of awareness of shortcomings in the outcomes of education and the current state of the pedagogical system within their institution, as well as of their causes and related upcoming changes.

Teachers with a medium level of the cognitive component of preparedness to be the subject of innovation activity are mainly distinguished by a medium degree of awareness of currently available pedagogical solutions that could boost the caliber of education if implemented (88 %); a medium degree of awareness of shortcomings in the outcomes of education and the current state of the pedagogical system within their institution, as well as of their causes and related upcoming changes (79 %); a medium degree of awareness of issues within the educational system, their causes, and possible ways to resolve them on a global, federal, regional, and municipal level (75 %).

Teachers with a low degree of cognitive preparedness to be the subject of innovation activity are mainly characterized by a low degree of awareness of currently available pedagogical solutions that could boost the caliber of education if implemented (82 %), a low degree of awareness of shortcomings in the outcomes of education within their institution, their causes, and expected changes in the pedagogical system (68 %), a low (57 %) and medium (43 %) degree of awareness of issues within the educational system, their causes, and possible ways to resolve them on a global, federal, regional, and municipal level.

Also, the cognitive component of teacher preparedness to be the subject of innovation activity is most significantly influenced by the cognitive components of preparedness to engage in fulfilling particular duties in managing innovation activity (Table 4).

Table 4. Assessment of the impact of the cognitive components of a teacher's preparedness to engage in fulfilling particular duties in managing innovation activity on the cognitive component of his/her overall preparedness to be the subject of innovation activity

	Value of Pearson correlation coefficient	Statistical significance level
Cognitive component of preparedness to engage in identifying issues within the pedagogical system	0.682	0.000
Cognitive component of preparedness to engage in searching for and perceiving novelties from the outside	0.681	0.000
Cognitive component of preparedness to engage in planning innovations in the pedagogical system	0.667	0.000
Cognitive component of preparedness to engage in motivating teacher innovation activity	0.552	0.000
Cognitive component of preparedness to engage in controlling and regulating innovation activity	0.426	0.000

Based on the findings of an analysis of the differences between a high, medium, and low level of the technological component of teacher preparedness to manage innovation activity, the authors came to the conclusion that this component is influenced to a virtually similar extent by the degree to which he/she has mastered specific methods for resolving objectives in managing innovation activity and his/her experience of applying them (the Pearson correlation coefficient is 0.726 and 0.669 for a significance level of $p \le 0.000$).

Note that the teacher group with a high level of it is mainly characterized by a high degree (79 %) of mastering tools and technologies for resolving objectives in managing innovation activity, as well as high (69 %) and medium (31 %) scores with respect to having experience of using them in practice.

Teachers with a medium level of the technological component of preparedness to be the subject of innovation activity (94 %) are characterized by a high degree of mastering tools and technologies for resolving objectives in managing innovation activity, and mostly medium (82 %) scores regarding experience of applying them.

Teachers with a low level of the technological component of preparedness to be the subject of innovation activity (79 %) are characterized by a low (68 %) and medium (32 %) degree of mastering tools and technologies for resolving objectives in managing innovation activity, as well as mostly low (76 %) and medium (24 %) scores regarding experience of applying them.

The study's teacher groups with a high, medium, and low level of the organizational component of preparedness for innovation activity differ significantly based on the Mann–Whitney U test (significance level $p \le 0.000$) in the ability to:

- independently distribute specific duties within the task team concerned with preparations for the implementation of novelties;
 - coordinate teachers' actions;
 - control the work of the teacher task group implementing a novelty;

- independently resolve differences among group members that may arise in implementing a novelty;
- make decisions in the event of unforeseen circumstances arising during the group's preparations for a certain activity.

Teachers with a high level of the organizational component of preparedness to be the subject of innovation activity are distinguished by that they tend to: more often distribute independently the duties within the task team concerned with preparations for the implementation of novelties, although they may sometimes do so in concert with the person in charge; more often coordinate their actions independently, while from time to time this is done by the person in charge; most of the time, control their work on implementing novelties independently in concert with other teachers, although now and then it is done by the administration; be capable of resolving independently most of the differences that may arise in the course of joint work; independently make half of all decisions regarding changes in plans in the event of unforeseen circumstances arising, the other half taken care of by the administration.

Teachers with a medium level of the organizational component of preparedness to be the subject of innovation activity are distinguished by that they tend to: distribute the duties within the task team concerned with the implementation of novelties in concert with the person in charge, although it is the latter who makes these decisions more often after consulting with the group members; from time to time coordinate their actions independently, but it is the person in charge who does it more often; control their work on implementing novelties independently in concert with other teachers, but it is the administration that does this more often; be capable of resolving independently most of the differences arising in the course of joint work; be capable of making plan changes independently in the least number of cases, with the school's administration taking care of most of them.

The low degree to which teachers are organized shows up in that most of the time they need the school's administration to interfere to help resolve issues related to the distribution of duties within task groups concerned with implementing novelties, coordination of teachers' actions, resolution of differences among team members, correction of plans, and administration of control over the course and results of the activity of task groups.

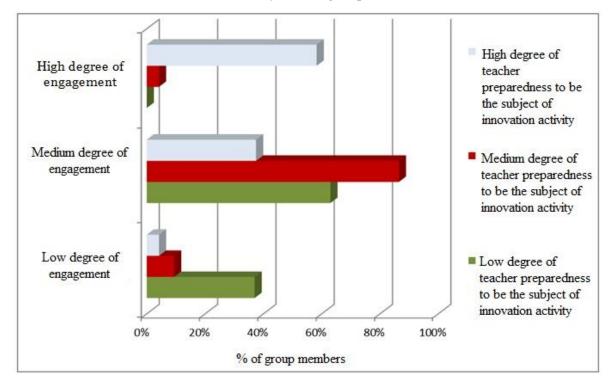


Figure 2. Distribution of the degrees of teachers' preparedness to be the subject of innovation activity within groups with different degrees of their engagement in fulfilling duties in managing this activity

The differences in the organizational component of teachers' preparedness to manage the school's development are influenced the most by their ability to independently resolve differences among team members arising in implementing novelties (the Pearson correlation coefficient is 0.624 for a significance level of $p \le 0.000$) and the least by their ability to distribute duties within task groups concerned with implementing novelties or preparations for major activities (the Pearson correlation coefficient is 0.456 for a significance level of $p \le 0.000$).

The study also substantiates the existence of a relationship between teachers' preparedness to be the subject of innovation activity and their actual engagement in managing this activity. The distribution of levels of teacher preparedness to be the subject of innovation activity within teacher groups with different degrees of engagement in managing innovation activity is illustrated in Figure 2. The Pearson correlation coefficient for data obtained is 0.524 for a significance level of $p \le 0.001$.

Based on the Mann–Whitney U test, groups with a high, medium, and low degree of preparedness to be the subject of innovation activity differ significantly in teachers' engagement in managing innovation activity (Table 5).

Table 5. Assessment of the differences between teacher groups with different degrees of preparedness to be the subject of innovation activity by degree of teachers' engagement in managing this activity

	Assessment of significance of differences by degree of engagement in managing innovation activity		
	Between groups with a high and low degree of preparedness to be the subject of innovation activity	Between groups with a high and medium degree of preparedness to be the subject of innovation activity	Between groups with a medium and low degree of preparedness to be the subject of innovation activity
Value of Mann– Whitney U test	98.5	529.0	903.5
Significance level	0.000	0.000	0.000

As a result of this study, the authors found empirical substantiation for the dependence of teachers' preparedness to be the subject of innovation activity on the motivational, technological, organizational, and cognitive components of preparedness to manage the development of their school, as well as on preparedness to fulfill particular duties in managing this activity (identifying issues within the educational system, searching for novelties to be implemented going forward, planning changes in educational activity, motivating teacher innovation activity, and controlling and regulating teacher innovation activity).

The study established that there exists a positive correlational relationship between each of the components of teacher preparedness to be the subject of innovation activity and similar components of preparedness to fulfill particular duties in managing the school's development.

The authors statistically substantiated the hypothesis that the degree of the instructor's engagement in the process of managing the school's development depends on the degree of his/her preparedness to be the subject of innovation activity. Consequently, the teacher's engagement in the process of managing the school's development could serve as an external criterion for validating a methodology for assessing the degree of teacher preparedness to engage in managing the school's development. While the findings of the authors' assessment (in terms of the overall degree of teacher preparedness to engage in managing the school's development, levels of its particular components, and factors behind the differences in the degree of their formedness; degrees of teacher preparedness to fulfill particular duties in managing innovation activity) could serve as the basis for the development of a program for boosting teacher preparedness to be the subject of innovation activity (Tyunnikov, 2013; Tyunnikov, 2016; Tyunnikov, 2016a).

5. Conclusion

The authors' theoretically and empirically substantiated instrumentarium for assessing the degree of instructor preparedness to be the subject of innovation activity in a school could serve as the basis for the assessment and development of this characteristic going forward. The methodology could be used to determine specific factors affecting teachers' degree of preparedness to manage the development of their school, work out individual trajectories of increase in their innovation competence, and ensure their productive engagement in the process of working out the school development program. All this should result in improvements in the caliber of the school's innovation activity.

6. Acknowledgements

All work as part of this project was carried out at the Institute of Strategy for Education Development of the Russian Academy of Education.

References

Afanasyeva, 2016 - Afanasyeva, T. P. (2016). A model for instructor preparedness for innovation activity. In G. P. Novikova, Innovation activity in education: Proceedings of the 10th International Research-to-Practice Conference. Part 1. Yaroslavl, Russia: Kantsler.

Afanasyeva, Novikova, 2016 - Afanasyeva, T. P., & Novikova, G. P. (2016). A problem-oriented analysis of the state of the pedagogical system within an institution of preschool learning. Sovremennoye Doshkolnoye Obrazovaniye. Teoriya i Praktika, 3.

Alekseyenkova, 2016 - Alekseyenkova, Ye. G. (2016). The impact of the caliber of the motivational environment in schools on the degree of teacher participation in innovation activity. In G. P. Novikova, Innovation activity in education: Proceedings of the 10th International Research-to-Practice Conference. Part 1. Yaroslavl, Russia: Kantsler.

Alekseyenkova et al., 2015 - Alekseyenkova, Ye. G., Afanasyeva, T. P., & Yeliseyeva, I. A. (2015). Differences in the caliber of the motivational environment for the innovation activity of institutions of general learning. In G. P. Novikova, Innovation activity in education: Proceedings of the 9th International Research-to-Practice Conference. Yaroslavl, Russia: Kantsler.

Lazarev, 2013 - Lazarev, V.S. (2013). Dimensions and objectives in enhancing innovation activity in education. *Pedagogika*, 3.

Lazarev, 2014 - Lazarev, V.S. (2014). Implementation of general education standards: Unresolved and unresolvable issues. *Pedagogicheskoye Obrazovaniye i Nauka*, 5.

Lazarev, 2015 - Lazarev, V.S. (2015). Federal State Educational Standards for general education: A great talk versus a lousy walk. *Pedagogika*, 4.

Lazarev, 2015a - Lazarev, V.S. (2015). Principles of the theory of developing pedagogical systems. *Pedagogika*, 6.

Lazarev et al., 2015 - Lazarev, V. S., Afanasyeva, T. P, & Yeliseyeva, I. A. (2015). Innovation activity in schools of developmental learning: A research and methodology guide for school employees. Moscow, Russia: Avtorskiy Klub.

Lazarev, Razuvayeva, 2009 - Lazarev, V. S., & Razuvayeva, T. N. (2009). The psychological preparedness of a pedagogical team for innovation activity. Surgut, Russia: RIO SurGPU.

Lazarev, Yeliseyeva, 2015 - Lazarev, V. S., & Yeliseyeva, I. A. (2015). A study of a pedagogical team as the subject of innovation activity. Voprosy Psikhologii, 1.

Moiseyeva, 2015 - Moiseyeva, O. M. (2015). A system of support for the innovation activity of educational institutions: Its major features and some ways to achieve them. *Pedagogicheskoye Obrazovaniye i Nauka*, 5.

Kharisova, Shukayeva, 2015 - Kharisova, L. A., & Shukayeva, T. M. (2015). Enhancing innovation activity in institutions of general learning: A study guide. Moscow, Russia: InIDO RAO.

Kharisova, Shukayeva, 2016 - Kharisova, L. A., & Shukayeva, T. M. (2016). Analysis and assessment as a condition for improvements in the caliber of innovation activity. In G. P. Novikova, Innovation activity in education: Proceedings of the 10th International Research-to-Practice Conference. Part 1. Yaroslavl, Russia: Kantsler.

Novikova et al., 2013 - *Novikova*, *G. P., Afanasyeva*, *T. P., & Yeliseyeva*, *I. A.* (2013). Issues in the preparedness of institutions of pre-school learning for implementing the Federal State Educational Standards. *Pedagogicheskoye Obrazovaniye i Nauka*, *5*.

Sidorenko, 2003 - Sidorenko, Ye. V. (2003). Methods for mathematical processing in psychology. Saint Petersburg, Russia: OOO Rech.

Tyunnikov, 2013 - Tyunnikov, Yu. S. (2013). The professional preparedness of pedagogues for innovation activity as an object of pedagogical analysis and assessment. In V. V. Krylova, The theory and practice of attaining an educational process of high caliber under present-day conditions: Proceedings of the 5th Interregional Research-to-Practice Conference, Sochi, September 27–28, 2013. Sochi, Russia: SGU.

Tyunnikov, 2016 - Tyunnikov, Yu. S. (2016). Objective- and function-based coordination of expert diagnosis and self-diagnosis of pedagogue preparedness for innovation activity. In G. P. Novikova, Innovation activity in education: Proceedings of the 10th International Research-to-Practice Conference. Part 1. Yaroslavl, Russia: Kantsler.

Tyunnikov, 2016a - Tyunnikov, Yu. S. (2016). Interrelation of Evaluation and Self-Evaluation in the Diagnostic Procedures to Assess Teachers' Readiness for Innovation. *European Journal of Contemporary Education*, 16(2).

Tyunnikov, Krylova, 2015 - Tyunnikov, Yu. S., & Krylova, V. V. (2015). An integrative approach to constructing a system of preparation of future pedagogues for innovation activity. *Pedagogicheskoye Obrazovaniye i Nauka*, 5.