

DCCD 2020**Dialogue of Cultures - Culture of Dialogue: from Conflicting to Understanding****SCIENTIFIC POTENTIAL OF TEACHERS OF SECONDARY
VOCATIONAL EDUCATION IN THEIR PROFESSIONAL
COMMUNICATION**

Tatyana D. Shaposhnikova (a)*, Irina M. Kurdyumova (b), Anatoly V. Bychkov (c),
Elena G. Alekseyenkova (d)

*Corresponding author

(a) Lab for Comparative Education, Institute for the Education Development Strategy of the Russian Academy, 16 Str. Zhukovsky, 105062, Moscow, Russia, tatianashah@inbox.ru

(b) Lab for Comparative Education, Institute for the Education Development Strategy of Russian Education Moscow, Russian Federation

(c) Lab for Professional Education, Institute for the Education Development Strategy of Russian Education, Moscow, Russia

(d) Lab for Professional Education, Institute for the Education Development Strategy of Russian Education Academy, Moscow, Russia

Abstract

The contemporary stage of development of secondary vocational education featured an increasing demand for training specialists in this field, with a focus on their professional development, the use of their scientific potential, in particular in their professional activities, including in practical communication in teaching. In solving the problem of training teachers of secondary vocational education, the authors proceed from the competence approach and the need to develop research skills as universal and promising competencies. The level of development of these skills can be used to assess the scientific potential of workers, preparedness to change, ability to quickly and adequately respond to external situations, see and identify problems in professional activities and find ways to solve them, evaluate the results of their work, observe and analyze educational phenomena and facts, and choose the most effective ways to achieve teaching objectives. The authors conducted a comparative review of the experience of training specialists of secondary vocational education for innovative activities in teaching future students, for active use of the scientific potential of teachers in the training process, and for increase of their professional level in the system of non-formal and informal education in different countries (Russia, UK, USA, Canada, Australia, New Zealand). It allows to conclude that professional communication based on dialogue and professionals' need for interaction, mutual help and mutual enrichment is among the most effective forms of pedagogical support of development of the scientific potential of vocational education workers for successful use of their promising research competences in their activities.

2357-1330 © 2020 Published by European Publisher.

Keywords: Leading, promising, research competencies, scientific potential.



This is an Open Access article distributed under the terms of the Creative Commons Attribution-Noncommercial 4.0 Unported License, permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

1. Introduction

In the course of today's reform of secondary vocational education (SVE) in Russia, the most important is the focus on values of continuous education, self-development and self-education of its employees, their ability to generate their own solutions to the problems facing the socio-cultural modernization of a developing economy and the relevant personnel training practices, which will depend directly on the availability and use of scientific potential, development and application of universal, promising and advanced competencies in their teaching activities. The level of training of workers for the country's economy and its competitiveness will depend on how well they are prepared and whether they are able to conduct research, meet innovative teaching requirements, and constantly improve their professional level. The workers' ability to master both traditional and innovative types of professional activities has been the crucial component of human capital. Research or project competencies that are promising, universal and advanced are considered the most important of those types of activities, as they make up the scientific potential of teachers in secondary vocational education.

2. Problem Statement

Why is it that the scientific potential of secondary vocational education workers, which is provided by promising advanced research competencies, is now the focus of attention of specialists in this field in nearly all developed countries? The existing contradictions between the challenges of modern times, the requirements of advanced economic development and the insufficient level of preparedness of both vocational teachers and vocational graduates for innovative changes provide an answer to this question and make it urgent to form promising advanced competencies for vocational teachers and graduates that would enable the specialists to conduct their professional training activities in the context of advanced and synchronous learning requirements. Research conducted in Russia and in other countries shows that the level of preparedness of vocational education workers to apply advanced promising research competencies in their work is insufficient (Andryukhina et al., 2016). Meanwhile, the effectiveness of achieving personnel training objectives for a developing economy is highly dependent on the ability of teachers to use their scientific potential, to develop promising research competencies when learning new activities to transfer those skills and knowledge to students for them to master the latest technical equipment and new process technologies.

In Russian and Western education, the problem of the scientific potential of secondary vocational education workers, based on their promising research competencies and their preparedness to use them in their activities, is basically dealt with within the framework of competency approach and theories of advanced education, which form the basis for the strategy of sustainable development of the state, society and individual, and causing the need for advanced training of SVE workers who will master promising competencies. In different studies, those are referred to as “foresight competencies”, “future work skills”, “competencies related to the new technological paradigm” (WorldSkills), or “underlying characteristics of people” that are “causally related to effective or superior performance in a job,” “generalizing across situations, and enduring for a reasonably long period of time” (Hayes, 2017, p. 2). These competencies are information and communication research competencies, project competencies and cross-cultural

competencies. They are complemented by self-management of professional development. Together, they all make up the scientific potential of a SVE worker (Ursul, 2012; Zhukov, 2018).

3. Research Questions

Concern the state of preparedness of vocational education workers to use their scientific potential in professional activities, as also forms of pedagogical support for specialists as used in different countries to allow them to improve their professional level. In Russia, academics tend to associate the scientific potential of secondary vocational education workers with a fairly high level of education of specialists (teachers, job training foremen, teaching methodology experts), as compared with foreign countries. Thus, the majority of teachers in state and non-state educational institutions of the secondary vocational education system have a university degree, with just over half being graduates from teaching universities (with the exception of foremen of vocational training) (Volchenkova, 2009).

According to Russian and foreign scientists, specialists who have a university degree should have a consistent motivation for personal self-development and professional improvement; they should be prepared for innovative research activities, for using and developing their scientific potential. However, according to research results, the Russian system of secondary and higher professional education is gradually losing its innovative, research component — only a quarter of SVE manpower in our country is engaged in innovative activities and self-development (Andryukhina et al., 2016). The research results suggest academics may speak about the unpreparedness of secondary vocational education workers to solve the problems of training specialists whose qualifications meet the needs of the economy. Less than 50% of teachers are engaged in the organization and development of creative and scientific activities of students; more than 60% do not develop or use new resource materials for teaching and monitoring; and only a small number (27%) of teachers implement innovative practice-oriented learning models. Secondary vocational school teachers have been even more unprepared for the development of their polyprofessional and transprofessional competences (Gayazov, 2017).

A similar situation can be seen in foreign countries, such as the USA, Canada, Australia, and New Zealand (Hines, 2019; Krasnova et al., 2017; Pollok, 2019). Research conducted in these countries shows that workers of secondary vocational education institutions spend little time on research activities in their work, developing their promising competencies and improving their professional level (the latter is usually associated only with issues of their career growth — “career psychology” and self-determination, and self-actualization) (Maslow, 2007; Tomlinson, 2008).

Researchers from all countries are greatly concerned about the fact that the knowledge and skills that are promising and advanced and received by teachers during their training are not actively used in their professional activities and not transferred to students, but are hopelessly outdated and lag behind the needs of the economy. However, only a combination of research and teaching can give positive results in training of future specialists. Here, “ineffective training” and “missed opportunities” are obvious (Baldwin & Ford, 2018), as well as unpreparedness for prospective changes in the profession, for such phenomena as monoprofessionalism, polyprofessionalism and transprofessionalism.

It is concluded that it is already necessary to look for ways and means to stimulate the development of the scientific potential of vocational workers, and various forms of pedagogical support.

In foreign countries, the solution to this problem is provided by non-formal and informal education. What forms of pedagogical support for vocational workers are proposed? Specialists talk about professional communication of employees, which is based on the use of their need for dialogue, communication, mutual assistance, mutual enrichment and sharing experience.

For example, in the United States and Canada, the activities of professional communities have become widespread through their “groups of friendly critics” — associations of teachers who meet on a regular basis to address important professional matters. The groups allow for collective self-reflection on teaching activities, discussion of the most important and problematic issues of training, development and adoption of collective solutions. According to American scholars, this form of communication in professional communities contributes to effective development of scientific potential, gaining experience in the use of research competencies based on collective analysis of situations, their joint discussion and search for solutions to problems: to eliminate the traditional “professional isolation” of teachers, which limits the opportunities for improvement of their teaching process (Arends & Kilcher, 2018; McLaughlin & Talbert, 2016).

Discussions in professional communities take place as part of the business dialogue; they are developed in the formats of scholarly study and scholarly dispute, which suggest, as regards the content and structure, not only building “friendly criticism” in the dialogue, but also using and developing, through discussion and analysis of problematic issues, such teachers' research competences as the ability to cover all aspects of the problem brought up for discussion and to provide considerate discussion in decision-making and reasoned justification of their assumptions, statement of hypotheses, and use of the scholarly discussion practice (Cerbin & Kopp, 2017).

In Canada, special attention is paid to the development of teachers' own collaborative abilities manifested in the ability to establish contacts in professional communication with both colleagues and students. According to the Canadian developers of programs for the development of scientific potential on the basis of reflection, it is reflexive stimulation that is essential to develop research competencies in students during the learning process. Teachers are offered different ways and forms of practical activity based on the implementation of the principle of learning through research. Scholars in Canada see the key to ensuring success of college graduates in their professional activities in increasing the degree of proficiency of teachers themselves (Accreditation Resource Guide, 2017)

In the UK, great attention is paid to “dual professionalism”, which presupposes maintaining and constant updating and developing research competencies of employees in this field — teachers, coaches, tutors, consultants of vocational education. Therefore, they must spend at least 30 hours a year on self-development and research. According to surveys, only half of teachers utilize about 15 hours a year, so they are constantly provided with such forms of pedagogical support for professional communication as webinars, workshops, online programs, mini-studies, through which teachers are enriched with new ideas. Basing professional activities on new ideas is the highest form of continuing professional development. The experience of organizing the work of tutors is noteworthy: for example, they monitor on a weekly basis the writing of essays that contribute to the development of creative and critical thinking, teach students not to memorize facts, but to approach non-trivial tasks creatively, and help senior students to conduct scientific research in their previously chosen field of study. The practice of professional

communication between teachers, tutors and students shows that in the process of their communication, a culture of dialogue between professionals, both established and future, is being formed.

In Australia and New Zealand, there is a growing interest in research to develop the scientific potential of teachers in technical schools and colleges: these countries are trying not only to use experience of others, such as the UK, but also to actively apply it to their national education systems. In New Zealand, a model for increasing the skills of vocational education workers (NZGSE) is popular. It is based on four required activities: the teacher is the one who builds relationship (the Captain); the Scholar (detached) is the analyst of actual training and education: the Coach is the empowerer; the Colleague is focused on themselves (self-improvement). The teacher who is Scholar of programs should not only be able to use the results of educational research, but also to conduct such research on data collection, and be able to process, analyze and interpret the data. In the role of a “detached scholar”, the teacher analyzes the learning process, sees its advantages and disadvantages, and is able to plan and organize the process didactically. The role of “self-focused colleague” implies skills and abilities of reflection and self-education, assessment of teachers' activities — self-assessment based on reflection. The program also provides for a whole system of assessment activities for principals who want to get an independent assessment of the competence of a teacher or to review the assessment system of the entire educational institution, or the administration. To this extent, the program features specific and fast methods for obtaining unbiased information.

4. Purpose of the Study

Our study is based on research of the experience of developing scientific potential in the form of universal promising competencies of SVE workers in national and foreign education institutions as exemplified in Russian and international studies and projects, allowing for comparing achievements of different countries in this field, and reviewing the forms and methods of solving the problem, with professional communication of teachers taking an important place. This comparative review makes it possible not only to compare indicators of national vocational education systems with the best foreign practices, but also to use their experience with their own SVE system.

5. Research Methods

The comparison and collation method used in the study provides for identification and division of common and distinctive features and properties of the objects of interest and their development trends, identification of particular and common patterns, similarities and differences, trends in changes and directions for the development of the systems. The results and conclusions of the materials on hand are obtained using a statistical research method, which involves the analysis of quantitative criteria of the phenomena under study. However, reference should be made to the opinion of experts who note that “quantitative indicators, parameters and data from national statistics often do not lend themselves or do not lend themselves well to international comparison and do not necessarily serve as indicators of positive changes in education systems” (Ravitch, 2016, p. 160). Nevertheless, foreign researchers note the importance of this method, supporting the assumption that “everything that can be measured

can be improved” (Myuller, 2019, p. 27) Some difficulties may also be caused by different interpretations of the essence of certain concepts that are analyzed and compared in the research. For example, in foreign English-speaking practice in the United States, Canada, UK, New Zealand and Australia, the concept of “scientific potential of employees in the field of secondary vocational education” is synonymous with “research or project competencies.”

6. Findings

The research shows the importance of using the scientific potential of workers of secondary vocational education institutions in the current climate of economy development. The problem is relevant for most countries around the world. The comparison of the findings and results of the research shows that workers in this field are not entirely prepared to use their scientific potential, which is exemplified by the fact that they have little knowledge of the methodology and methods of advanced professional development and research technologies, and are not motivated to use promising research competencies in their professional activities. The core competencies in the SVE educational systems in most countries are still mainly focused on professional training, whereas today professional activities of specialists in this field require special functions and efforts to form yet transprofessional competencies in the transition from advanced to transprofessional education. The results of most studies indicate the need to pay more attention to the formation of promising, “future competencies” of graduates, which directly depends on the SVE specialists' self-perception as researchers who are able to apply innovative forms and methods in their work, make decisions, work effectively in a team and develop leadership qualities, communication skills, analytical and critical thinking.

7. Conclusion

The insufficient level of preparedness for effective use of advanced research competencies in the activities in the context of continuous training and professional reorientation, which has been detected in research in secondary vocational education, explains the natural consequence of the existing discrepancy between the level of professional training of SVE graduates and the challenges of the time. In this regard, the need for a comprehensive study of the state of preparedness of specialists in this field for reaching their professional objectives, and of forms and means of pedagogical support for teachers remains urgent. This kind of research will contribute to the search for scientifically valid, theoretical, methodological and applied solutions to personnel problems of secondary vocational education system, and its optimal functioning to meet the present and prospective needs of society and the labor market.

Acknowledgments

This work was carried out as part of the state task of the Federal State Budgetary Institution “Institute for the Development of Education of the Russian Academy of Education”. Project Research of the scientific potential of pedagogical workers of professional educational organizations and the mechanism for its improvement.

References

- Accreditation Resource Guide. (2017). Ontario College of Teachers. Ordre des enseignantes et des enseignants de l'Ontario. (2017, September). https://www.oct.ca/-/media/PDF/Accreditation%20Resource%20Guide/Accreditation_Resource_Guide_EN_WEB.pdf
- Andryukhina, L. M., Dneprov, S. A., Sumina, T. G., Zimina, E. Y., Utkina, S. N., & Mantulenko, V. V. (2016). The Model of Monitoring of Vocational Pedagogical Competences of Professors in Secondary Vocational Education. *International journal of Invironmental & Science Education*, 11(14), 7016–7034.
- Arends, R. I., & Kilcher, A. (2018). *Teaching for Student Learning. Becoming an Accomplished Teacher*. Routledge Taylor and Francis Group.
- Baldwin, T., & Ford, J. (2018). Transfer of training: A review and directions for future research. *Personnel Psychology*, 41(1), 63–105.
- Cerbin, W., & Kopp, B. (2017). Lesson Study as a Model for Building Pedagogical Knowledge and Improving Teaching. *International Journal of Teaching and Learning in Higher Education*, 18, 250–257.
- Gayazov, A. S. (2017). Teoriya podgotovki polifunktional'nogo spetsialista novogo tipa [Theory of training a multifunctional specialist of a new type]. BGP.
- Hayes, J. L. (2017, November). A new look at managerial competence: the AMA model of worthy performance. *Managerial Review*, 2–4.
- Hines, A. (2019). Getting Peady for a Post Work Future. *Foresight and STI Governance*, 13(1), 19–30. <https://doi.org/10.17323/2500-2597>. 2019.1.19.30
- Krasnova, G. A., Mozhaeva, G. V., & Polushkina, E. A. (2017). Razvitie nepreryvnogo professional'nogo obrazovaniya za rubezhom [Development of continuing professional education abroad]. Izdatel'skij Dom Tomskogo gosuniversiteta.
- Maslow, A. (2007). Dal'nie predely chelovecheskoj psihiki (per. s angl) [The far reaches of the human psyche. Translated from Eng.]. Evraziya.
- McLaughlin, M. W., & Talbert, J. E. (2016). *Building School-Based Teacher Learning Communities: Professional Strategies to Improve Student Achievement*. Teachers College Press.
- Myuller, D. (2019). Tiraniya pokazatelej: kak oderzhimost' tsiframi ugrozhaet obrazovaniyu, zdavooohraneniyu, biznesu i vlasti (per.s angl) [Tyranny of indicators: how obsession with numbers threatens education, health care, business and power. Translated from Eng.]. Al'pina Pabliisher.
- Pollok, R. (2019). Shest' distsiplin proryvnogo obucheniya. Kak prevratit' obuchenie i razvitie v biznes rezul'taty [Six disciplines of breakthrough learning. How to Turn Learning and Development into Business Results]. EKSMO.
- Ravitch, D. (2016). *The Death and Life of the Great American School System*. Basic Books.
- Tomlinson, P. (2008). Psychological theory and pedagogical effectiveness: *The learning promotion potential framework*. *British Journal of Educational Psychology*, 8(4), 507–526.
- Ursul, A. D. (2012). Na puti k operezhayushchemu obrazovaniyu [On the way to advanced education]. *Vestnik Herald of the Chelyabinsk State Academy of Culture and Arts*, 4(32), 135-139.
- Volchenkova, T. V. (2009). Formirovanie u pedagogov gotovnosti k innovatsionnoj pedagogicheskoj deyatel'nosti [Formation at teachers of readiness for innovative pedagogical activity]. *Monthly theoretical and scientific-methodical journal "Secondary vocational education"*, 12, 2–4.
- Zhukov, G. N. (2018). Strategiya operezhayushchego professional'nogo obrazovaniya [Strategy of advanced vocational education]. *Professional education in Russia and abroad*, 1, 63–66.