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### THE USE OF WORLDSKILLS RUSSIA METHODS DURING INTERIM ASSESSMENT OF FUTURE TEACHERS

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#### *Abstract*

The relevance of the study is due to new approaches to the training of qualified teachers taking into account international standards, which require changes in the structure and content of higher and secondary vocational education. The purpose of the study is to use the WorldSkills Russia (WSR) methods during interim assessment as a condition for formation of professional competence of future teachers of Life Safety. In the present work theoretical and empirical methods were used, including analysis of scientific, educational, methodological and regulatory documentation, observation, questioning, pedagogical experiment, comparison. The article describes the experience of carrying out interim assessment of students majoring in Life Safety at the Faculty of Physical Culture and Sports of Vyatka State University using the principles and methods of WSR. Considering the lack of competence in the WSR standards, a set of assessment materials was developed in accordance with the requirements of the WSR methods. Examples of modules and tasks are given. Requirements for equipping the working area of those who are assessed are described. Criteria for assessing the quality of knowledge and professional competences are discussed. The materials of the article may be useful for pedagogical workers, specialists in the field of education.

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**Keywords:** WorldSkills methods, interim assessment, Life Safety.



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## 1. Introduction

The relevance of the study is due to new approaches to the training of qualified teachers taking into account international standards that require changes in the structure and content of higher and secondary vocational education (Majkova, 2017; Dikova & Mashchenko, 2018).

For a long time, a theoretical exam was the main type of assessment of university students' competence, which allows to a greater degree to assess knowledge. Today, an objective independent assessment of practical skills required in future professional activities is becoming more and more significant (Elshansky, 2017; Smolina, 2017; Shkabura & Lysikova, 2017; Vinokurova & Makeeva, 2018; Dikova & Mashchenko, 2018).

In this regard, the requirements imposed by modern society for the level of competence of future specialists determine the need to introduce innovative technologies in the educational process. When organizing the educational process from the standpoint of the activity approach, the best is the transition to the methods and technologies of interactive education that best facilitate the formation and development of students' key general and professional competencies (Morozova et al., 2018). The implementation of the competence-based approach in training future teachers requires not only continuous improvement of the content and forms of vocational training, but also a change in the processes of control and attestation of graduates (Eremina, 2017; Morozova & Kapustin, 2017; Dikova & Mashchenko, 2018).

Development and modernization of educational programs, methods, tools taking into account modern requirements for training of specialists are a priority task of educational institutions of higher and secondary vocational education (Eremina, 2017; Morozova & Kapustin, 2017; Demchenko & Zhukova, 2018).

In accordance with the requirements of Federal State Educational Standards, a graduate must be ready for labor skills even at the training stage. This defines the main content of a project for modernization of pedagogical education, the development of models for future teachers' training (Rud, 2018). According to the literature, one of the necessary conditions for formation and development of professional competencies of future teachers is the use of practice-oriented learning models (Filippovich, 2016; Mamychenko, 2017). Such methods can serve as a learning model using the resources and experience of innovative sites of WorldSkills (Shkabura & Lysikova, 2017; Vinokurova & Makeeva, 2018).

It should be noted that the WorldSkills movement was organized in order to improve the status of vocational professions. However, the WorldSkills Russia methods and standards are now being actively implemented in the educational process and higher education (Gareev, 2017; Majkova, 2017; Leskova, 2018; Nahodkina, 2018): in 2018, a demo exam on standards WS tested 38 Russian universities, which is twice as much as the figures for 2017 when 17 Russian universities participated (Ufimcev, 2018).

It is shown (Dikova & Mashchenko, 2018; Rud, 2018) that the introduction of the WS methods in the process of training students contributes to development of such personal qualities as individuality, creativity, independence and initiative, the ability to engage in project activities, which are necessary for formation of the professional competence.

## **2. Problem Statement**

Taking into account the personal experience, as well as the opinion of a number of authors (Gareev, 2017; Majkova, 2017; Vinokurova & Makeeva, 2018; Semenova & Ushanov, 2018; Morozova, Kapustin, Koshkina, Kasyanov, & Bespyatykh, 2018; Yakovleva, Voiteleva, & Krasilova, 2018), it can be confirmed that the use of the system-activity approach in the educational process, the WS methods aimed at developing the necessary professional skills, provide a higher level of qualification of future specialists.

Based on the above, as well as literature data (Pylväs & Nokelainen, 2017; Naumkina, 2018), we believe that the introduction of the WS methods and standards into interim assessment will contribute to development of professional competencies of future teachers.

## **3. Research Questions**

What is the possibility of using the WSR methods for conducting interim assessment of future teachers? What is the list of modules and tasks in accordance with the principles of WSR and the regulations on interim assessment? What regulatory documents for interim assessment must we develop in accordance with WSR standards? What are the requirements for the equipment of the working area during interim assessment? What are the criteria for assessing professional competencies using the WSR methods? What is the possibility of evaluating the effectiveness of interim assessment (exam) in this format?

## **4. Purpose of the Study**

The purpose of the study is to evaluate the effectiveness of using the WSR methods when conducting interim assessment as a condition for formation of the professional competence of future teachers.

## **5. Research Methods**

In the course of the study, theoretical and empirical methods were used. Theoretical methods included the analysis of scientific, educational, methodological and regulatory documentation in order to study current approaches to assess the results of interim assessment and take into account the basic requirements of WorldSkills Russia. The methods of observation, questioning, pedagogical experiment, comparison were used as empirical methods.

The experimental base of the study was the Faculty of Physical Culture and Sports of Vyatka State University. The study involved 24 student teachers specializing in Life Safety and 8 teachers.

## **6. Findings**

The effectiveness of interim assessment with the use of the WorldSkills Russia methods was assessed by the example of principal disciplines of future teachers of Life Safety who form their

professional competencies. The assessment was carried out on the basis of a specialized demonstration room “Life Safety”.

The results of the effectiveness of interim assessment are considered through the example of an academic discipline “Theoretical Foundations of Ensuring the Safety of an Educational Institution. Training Methods”.

### **6.1. Assessment of the applicability of the WSR methods for conducting interim assessment in the discipline**

Interim assessment of future teachers of Life Safety was carried out in the form of a theoretical exam with the inclusion of one practical question until 2018. Assessment of formation of professional competencies took place in the traditional way - according to the degree of correctness of students' answers to teachers' questions. With the introduction of the professional standard “Teacher” and educational standards, the imperfection of the traditional form of assessment became apparent. With this system of assessment, teachers have certain difficulties in objectively assessing the students' professional competence. This is due to the limited task of an examination paper. Since 2016, Vyatka State University has made a decision to apply the WSR methods when conducting interim assessment as a part of a pilot project on a program for teacher education modernization. In 2017, Vyatka State University received the status of a federal innovation platform for implementing the project “Assessing the Quality of Training Future Teachers using the WorldSkills Russia Methods” in accordance with the order of the Ministry of Education and Science of the Russian Federation of December 14, 2017 No. 1206. In 2018, interim assessment using the principles and methods of WSR was first applied to the educational program “Life Safety”. The use of WorldSkills methods for conducting interim assessment in the main subject was determined by the comparative analysis of requirements for interim assessment in accordance with the Regulations of Vyatka State University (No. 38 of September 28, 2016) and the requirements of WSR. It is impossible to conduct a demonstration exam in the disciplines of this educational program specialization, as competencies “Teacher” and/or “The teacher of Life Safety” are not in the WorldSkills Russia competence list. Consequently, sets of tasks and assessment tools for interim assessment were developed taking into account the specification of the competence standard (WorldSkills Standards Specifications WSSS).

### **6.2. Defining modules and tasks in accordance with the principles of WSR and regulatory documents on interim assessment**

Students of the educational program “Life Safety” in accordance with the professional standard can work as a teacher of Life Safety after graduation, as well as a teacher-organizer of Life Safety. When developing modules and tasks for interim assessment in the core discipline, we took into account the main type of activity of future graduates, including job responsibilities of a teacher-organizer of Life Safety, Federal State Educational Standard, professional standard “Teacher”, specification of similar competence “Teaching in Junior School”. A lecturer conducting the core discipline prepared task modules: Module 1 “Class Activities” (40%); Module 2 “Overtime activities” (30%); Module 3 “Organizational Activities on Safety of the Educational Institution” (30%).

According to each module, 20 different tasks in the form of examination cards were prepared for students. When preparing the tasks, the following requirements were met (Table 1).

**Table 01.** Requirements taken into account when preparing examination tasks

No.	Requirements
1	Time to do the task should be no more than one hour
2	Possibility to search, process and apply the necessary information using information and communication technologies
3	Knowledge and peculiarities of working with specialized equipment of the demonstration room “Life Safety”, including training to work with it
4	Theoretical training in teaching Life Safety, psychology, knowledge of age characteristics of students
5	Development of a fragment of an event using a text editor and its evaluation by the expert group
6	Demonstration to the expert group the practical part of the task in the form of work with volunteers, including the organization of security of the educational institution
7	Drawing up tasks taking into account the school curriculum on Life Safety
8	Providing equal opportunities for students to demonstrate their professional competence in the framework of the subject

The tasks for interim assessment were developed by the lecturer teaching this discipline 2 months before the exam. Table 2 shows examples of different tasks for the modules.

**Table 02.** Requirements taken into account when preparing examination tasks

No.	Module	Examples of tasks for modules
1	Class Activities	Make a presentation for a lesson in grade 9 on the topic “Alert and population evacuation in emergency situations” (in accordance with the work program for Life Safety). In the presentation all the stages of the lesson should be reflected. Prepare test materials for this lesson. Include a practical part with holding evacuation activities
2	Overtime activities	Develop an annual cyclogram of students’ planned briefings. Develop a plan for instructing students before summer holidays, taking into account the age (grades 7-9). Include a practical part with briefing.
3	Organizational activities	Fire safety organization of the educational institution (EI). Defend the proposed algorithm of EI work in regards to fire prevention. Include a practical part with the use of emergency fire-fighting equipment in case of fire in the EI.

Interim assessment involved doing examination task of only one module as compared to the demonstration exam. In accordance with the requirements of the WorldSkills Russia standards and methods, each task involved doing successive tasks, the results of which were evaluated by an expert group. The task consisted of 10 subtasks. Let us consider one of the exam tasks on the example of the module “Class Activities”.

Task description: to make a presentation for a lesson in grade 9 on the topic “Alert and Population Evacuation in Emergency Situations”. In the presentation all the stages of the lesson should be reflected. To prepare test materials for this lesson. To include a practical part with holding evacuation activities.

Subtask 1. To analyze the work program on the basics of Life Safety. Determine the place of the lesson in the module, section, topic section.

Subtask 2. To determine the type, form, purpose and objectives of the lesson. Make up a lesson plan.

Subtask 3. To determine the value of the presentation in the lesson. To determine the place of the presentation in the lesson structure.

Subtask 4. To select the training and visual material for the presentation.

Subtask 5. To prepare test and measurement materials on the lesson and/or on studied topics. To plan their use in the presentation.

Subtask 6. To plan the structure of the presentation, to consider its design. To create the presentation, correlate the presentation with the lesson plan.

Subtask 7. To defend the work orally, to justify the place of the presentation in the lesson, its structure, design, applicability. The five-minute speaking time allotted.

Subtask 8. To demonstrate the presentation. The ten-minute speaking time allotted.

Subtask 9. To hold students' (volunteers') evacuation activities in case of emergency.

Subtask 10. To analyze possible problems when studying the stated issue.

## **1. Preparation of regulatory documents in accordance with WSR standards for interim assessment**

To determine the level of formation of professional competencies, teachers of the department developed a set of assessment materials, including a set of tasks, criteria and assessment tools, infrastructure sheets, process maps, and equipping workplaces in accordance with the requirements of WSR standards.

Since the standard of competence “Teacher” and/or “Teacher-Organizer of Life Safety” is not included in the list of competencies of WorldSkills Russia, the function of the expert group during the examination was carried out by an examination commission consisting of three people: a teacher who teaches this discipline; a teacher of the cross-discipline; a head of the department – a chief expert.

## **2. Development of requirements for the equipment of the working area during the interim assessment**

The prerequisite for the demonstration exam and WorldSkills Russia Championships is the equipment of the working area with modern technological equipment. We took it into account when preparing the exam.

The equipment of the working area included equipment of students' workplace (multimedia equipment, laptops, interactive whiteboard, consumables) and demonstration equipment (personal protective equipment, emergency fire-fighting equipment, instruments for determining parameters of the microclimate, simulator robots, first aid supplies). The plan of the examination site included the following areas: an area of the expert group (examination board), a volunteer area and a working area.

A laptop with electronic versions of work programs, school textbooks on Life Safety, safety regulations of educational institutions, SanPiNs, a selection of standard programs for making

presentations and documents were provided for each student passing the exam. In the role of volunteers there were students of 2 and 3 years, studying Life Safety. Younger students performed the role of pupils when showing fragments of various tasks to the examiners, at the same time gaining a certain experience in passing such an exam.

### **3. Criteria for assessing the quality of knowledge and the professional competence using the WSR methods**

The results of interim assessment were determined based on the opinions and assessments of the expert group. The one-hour speaking time allotted, including the preparation and solution of all the tasks of the examination card. Each task performed by students was assessed on a 10-point scale based on the number of tasks in the card and the assessment system used at the WSR championships. Each expert group member evaluated the degree of task fulfillment, scored points in the protocol and assessed the task as a whole, based on the average value of the score. Then the score on a 10-point scale was transferred to the traditional 4-point scale (“excellent” - 7.51 and more; “good” - 5.01 - 7.5; “satisfactory” - 2.51 - 5; “unsatisfactory” - 0-2.5 points) and was recorded in the protocol.

The final grade was written in the exam record and a student’s record book, the teacher who teaches the discipline announced marks to students after the exam.

### **4. Evaluation of the effectiveness of interim assessment using the WSR methods**

The results of the interim assessment of students in the core discipline using the WSR methods were distributed as follows: out of 12 students, 8 (66.7%) got “good”, 4 (33.3%) - “satisfactory”. Thus, the average score was 3.67; quality indicator - 66.7%, which does not have statistically significant differences from the results of interim assessment in previous years (the average score for 2017 was 4.3), done in the traditional way. A higher average score when taking the exam in the traditional way, compared with the results of the interim assessment in 2018, we explain by a more usual form of the exam for students, where theoretical preparation was mainly evaluated.

The results of the pedagogical observation and questioning of students showed the following. More than 60% of students expressed positive opinion for interim assessment with the use of the WSR methods, provided that they were prepared for it in the process of continuous assessment. Taking an exam in this form, according to students, develops communication and organizational skills, forms practical skills and abilities necessary in future professional activities. At the same time, about 40% of students consider this exam form to be difficult and inexpedient, “not meeting their expectations”. 50% of students rated the exam as “a stressful situation”, 33.3% - “as hard work” and 16.7% - “nothing special”. A half (50%) of students believes that it takes longer to prepare for this exam than for the traditional exam. The remaining 50% of students hold the opposite opinion. Despite the fact that many tasks were worked out by students in the process of continuous assessment, the majority (66%) of the examinees experienced increased excitement: they felt fussiness and inaccuracy in movements, delayed responses according to the time-limit. Students-volunteers (70%) noted that participation in the exam was interesting for them, allowing them to assess their potential for implementation in their professional activities.

According to the expert group, the exam, held in this form, allows us to objectively assess the students' ability and readiness for professional activities, including as an organizer of Life Safety. It also makes it possible to improve the content of the educational program and the quality of teacher's work; to identify the weaknesses of the educational process in a particular discipline.

In 2018, in contrast to 2017, the interim assessment was before the final one in two core disciplines using the WSR methods. It should be noted that there were no statistically significant differences in the average score of the final certification for 2018 and 2017. At the same time, the interim assessment with the use of the WSR methods improved the quality indicator of the final certification of future teachers by 13%: all testees received only good and excellent marks. The average score of the final exam in 2018 was 4.67, which is 0.2 points more than in 2017.

Apparently, pre-training and skills training during interim assessment contributes to the stabilization of the emotional state, increases confidence in the application of skills, and reduces anxiety (Morozova et al., 2018). This contributes to the fact that during the final certification, students objectively better demonstrate their skills, are psychologically more resistant to the exam as a stressful situation (Shahova, 2017; Kapin, 2018; Semenova & Ushanov, 2018).

## **7. Conclusion**

Interim assessment helps determine the level of students' professional competence at this stage of training, as well as better prepare students for the state final certification using the methods and standards of WSR.

This form of interim assessment allows to assess the level of organization of the educational process, the quality of educational programs, if necessary, to correct them.

The results showed that the use of a new form of assessment of students provides a more objective and independent assessment of maturity of practical skills. Considering the lack of special competencies for students of the educational program "Life Safety" in the WSR competency list, the criteria for assessing the quality of knowledge and professional skills need to be developed by teachers, which requires certain theoretical and practical training.

The comparative analysis of the final certification with the use of the WSR methods confirms the effectiveness of using this examination in the interim assessment before the final one in the same format. In this regard, it is necessary to use different forms of organization of practical classes and current control taking into account WS standards, the application of innovative methods for the successful formation of professional competencies of future teachers.

At the same time, organization of this exam form requires considerable time, the availability of specialized equipment, the need for development of test materials and documentation, as well as special psychological preparation of students.

Thus, the use of the WSR methods for interim assessment and final certification, as well as the current control of students' knowledge contributes to the formation of professional competencies of future teachers.

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