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Point-rating system as one of the incentives of master students' independent work

Natal'ya Sergeyeva
Russian State Agrarian University –
Moscow Timiryazev Agricultural
Academy
Department of Foreign and Russian
Languages
Moscow, Russia
kukulenok72@mail.ru
http://orcid.org/0000-0001-7116-3526

Natalya Yakovleva
Russian State Agrarian University –
Moscow Timiryazev Agricultural
Academy
Department of Foreign and Russian
Languages
Moscow, Russia
yakovlevan@bk.ru
https://orcid.org/0000-0002-0208-1487

Irina Akimova
Russian State Agrarian University —
Moscow Timiryazev Agricultural
Academy
Department of Foreign and Russian
Languages
Moscow, Russia
akimova.ekaterina2014@gmail.com
https://orcid.org/0000-0002-6564-6561

Aleksandr Kuleshov
Russian State Agrarian University –
Moscow Timiryazev Agricultural
Academy
Department of Foreign and Russian
Languages
Moscow, Russia
akul76@yandex.ru
https://orcid.org/0000-0001-5927-7854

Abstract—The authors consider the shortcomings of the five-point evaluation system used in Russian universities. The desire for more effective incentives has led to the introduction of parallel evaluating systems at an educational institution. The paper evaluates the use of the point-rating system (PRS) to enhance the motivation of master students to engage in active training activities throughout the entire period of study in the discipline "Professional Foreign Language". In order to test the point-rating system, the authors worked out technological maps of rating points for evaluating the independent work of master students. The activities to be evaluated included preparing a report-presentation on the research topic and writing a scientific paper. Based on the performance results demonstrated by master students, a comparative analysis of learning outcomes was conducted. Following the survey results, the attitude of master students towards the point-rating evaluation system was determined. The use of the point-rating system for evaluating independent work develops the important intellectual qualities of master students, ensuring their desire to master the knowledge and put it into practice. Using the point-rating system to evaluate various types of independent work in the learning process makes it possible to obtain higher learning outcomes.

Keywords—point-rating system; types of independent work; professional foreign language; five-point evaluating system; stimulation of learning activities.

I. INTRODUCTION

At present, the higher school functions as a level system for the implementation of educational programs of three levels: bachelor degree – master degree – postgraduate studies. The new Federal Law "On Education in the Russian Federation" No. 273-FL, adopted on December 29, 2012, significantly changed the traditional structure of the

personnel training system, including the field of agroengineering [1]. However, engineering education in Russia has not fully satisfied modern requirements. Engineering education is not related to the real production base and advanced scientific research. The modern technologized world does not encourage young people to learn. However, in these new conditions, the aim of education is still to develop thinking skills, the ability to communicate and cooperate, understand and utilize the capacity of new technologies.

In 2017, new educational standards came into force aimed at modernizing the system of training in the master's degree programs. In particular, legislative changes have affected the educational process in foreign languages. The practical course of a foreign language in the master's programs is to train a specialist who must possess such universal competences as the ability to apply modern communication technologies, including those in a foreign language, for academic and professional interaction; ability to analyze and take into account the diversity of cultures in the process of intercultural interaction. Future professionals must study not only the specifics of their industry (in a foreign language), and not only the foreign language itself, they must learn to communicate (in writing and orally) on given professional topics, comprehending the logic of their upcoming professional activity [2].

Learning a foreign language is aimed at achieving a level of proficiency in a foreign language by master students. This implies developing language competencies and skills that enable them to conduct scientific and professional activities in a foreign language environment, participate in international research teams to solve scientific and educational problems, as well as use modern methods and



technologies of scientific communication in a foreign language [3]. This type of competence presupposes creative abilities and to a large extent trains master graduates for innovative activities [4].

The master graduates should be able to solve many professional problems, in particular:

- analyze global trends in the development of the industry (areas of their research and studies) and systematize scientific and technical information;
- to prepare scientific reviews and publications based on the research results;
- to apply modern research methods and search for innovative solutions to various problems.

All these tasks can be mastered through the proper realization of the competence potential of academic subjects included in the university curricula [5].

Traditional systems of knowledge and skills evaluation have a significant drawback since all the "levers" of management are concentrated in the hands of the teacher, which reduces the initiative in learning, independence and competitiveness of students. Often, in practice, the objectivity of evaluation is replaced by the teacher's subjective bias. The main requirement for control is to take into account the individual qualities of students, but in practice it is often ignored. It should be emphasized that the requirements for the quality of knowledge and the volume and level of skills formed are not talked about, but the individual characteristics of students (shyness, slowness or, conversely, self-confidence, etc.) are taken into account. By granting the right to an individual pace of advancement through the program and an independent choice of the option of studying the course, it is possible to eliminate the aforementioned disadvantages. The use of the point-rating system significantly contributes to the decision of the problems presented. The point-rating system in connection with the already accumulated experience in the education system is actively discussed in the literature. Many authors say that modern higher education requires a new evaluation system since the existing one no longer reflects the objective possibilities of students and does not stimulate cognitive activity. The problems of the quality of education at the university are studied in detail, while the most important aspect of education is not the evaluation of the amount of knowledge gained, but professional competencies that are implemented by solving educational and future professional tasks [6].

With the change in the education system in accordance with the international standards of the new generation, improved or completely new ways of controlling the quality of education are required. In this regard, most of the universities switched to the point-rating system for evaluating students' knowledge.

The analyzed experience of the point-rating system introduction in a number of universities shows that the main objectives of its introduction are:

- stimulating the daily systematic work of students;
- reducing the role of accidents during the final evaluation;

- increasing the competitiveness of students in the process of study;
- evaluating the real place that a student takes among fellow students in accordance with their success;
- creating the objective criteria in determining candidates for continuing education (master's, postgraduate, etc.);
- increasing the motivation of students to master professional educational programs based on a higher differentiation of the evaluation of the results of their academic work;
- increasing the academic mobility of students and their competitiveness in the international market of educational services.

The organization of the educational process using the point-rating system allows teachers to:

- plan rationally the educational process in the discipline and stimulate the work of students in studying educational material;
- manage the process of mastering each student and educational group in general of the material studied;
- make timely adjustments to the organization of the educational process based on the results of ongoing monitoring;
- objectively and fully determine the final grade based on intermediate results.

With the point-rating system, the results of students' educational activities are evaluated taking into account:

- quality of completing learning tasks;
- quality of acquired knowledge of the theoretical material of the curriculum;
- the ability to conceptual analysis;
- possession of practical skills;
- possession of additional materials not included in the curriculum;
- creative activity;
- the ability to find the right solution to typical and atypical tasks.

An important condition for the point-rating system is the timely execution of the established types of work. If the control point on the discipline is missed for a disrespectful reason or is not handed over the first time, then when it is retaken (even if the student responded well), some points are removed.

II. THE AIM OF THE STUDY

The federal state educational standard of higher education is a set of requirements that are mandatory for the implementation of basic professional educational programs of higher education – master's degree programs but leaves much freedom to educational and scientific organizations to fill the content of the programs. However, when determining the goal of teaching a



foreign language to master students, it is necessary to take into account such objective factors as the different level of foreign language communicative competence when entering the master's degree programs and a small amount of training hours in accordance with the curriculum [7].

According to the federal state educational standard, a clear correlation is established between the number of hours for classroom and independent work, and the number of hours devoted to independent work of students has increased. Independent work of a student of a higher institution is an essential component of the learning process, the process of establishing the development of a modern mobile personality and the preparation of a future qualified specialist [8]. This situation, in turn, required a review and creation of new forms of organization of control of the independent work of master students. The aim of the study is to evaluate the use of a point-rating system (PRS) to enhance the motivation of master students to work constantly throughout the entire period of study, which allows them to proceed to the construction of individual educational trajectories. Pointrating system allows determining the success and quality of independent work through certain indicators. Rating is a certain numerical value, which is expressed in a multi-point system, which integrally characterizes the independent work of master students and their participation in research work.

III. RESEARCH METHODS

When conducting pedagogical research, the following research methods were used:

- general theoretical analysis, synthesis, comparison, generalization, specification, modeling, analyzing methodological and psychological-and-pedagogical literature, Federal state educational standards, operating curricula and course evaluation materials, and other documentation related to the problem under consideration;
- empirical methods: analyzing and generalizing the pedagogical experience of foreign languages departments of non-linguistic universities concerning giving classes to master students; monitoring and analyzing class activities;
- sociological methods: conversation, observation, questioning, interviewing, rating;
- social and psychological methods: testing, training;
- mathematical methods: ranking, scaling, correlation.

IV. SUMMARY OF THE RESULTS

To prove the effectiveness of point-rating system for evaluating independent work on the preparation of a report-presentation on the research topic and on writing a scientific article in accordance with the operating curriculums of the discipline "Professional Foreign Language" in training direction 35.04.06 Agroengineering (orientations of training "Technical systems in agribusiness" and "Technical service in agriculture") the proposed system was used in the process of teaching master students. Master students of four groups (41 people) of 2018–2019 school year (the Institute of Mechanical and Power Engineering named after V.P. Goryachkin, Russian State Agrarian University –

Moscow Timiryazev Agricultural Academy) were involved into the experiment.

The main participants of the point-rating system are: master students, teachers, heads of departments, deans of faculties, educational and methodical management.

Master students:

- get acquainted with the content of operating curriculum of the academic discipline "Professional Foreign Language" in order to organize their independent work on mastering the main educational program;
- perform all types of independent work and report on implementation;
- comply with the established schedule for carrying out the mid-term controls and timely submit documents, confirming good reasons for not implementing it.

The teacher develops (in accordance with operating curriculum of the academic discipline "Professional Foreign Language"):

- recommendations on the organization of independent work;
- information on goals, means, labor intensity, deadlines, forms of control of independent work;
- recommendations on the design (presentation) of the results of independent work, depending on its type;
- recommendations on the selection of Russian and foreign educational, scientific, regulatory professional sources (a list of recommended references can be cited) when performing independent work on specific topics (tasks).

Department:

- approves the procedure for the implementation of the point-rating system;
- appoints responsible teachers;
- participates in the development of methodological support of the educational process for certain types of educational work assigned to it;
- develops measures to improve the rating of students;
- summarizes the experience of teachers in the pointrating system using in order to actively introduce progressive approaches to the learning process.

Dean's office and methodical commission of the faculty:

- organize the functioning of the point-rating system evaluating the educational work of master students;
- are responsible for collecting rating information;
- monitor its accuracy;
- provide the department with the necessary documentation.

The teacher recommends Russian and foreign educational, scientific, regulatory professional sources. The



problems of developing skills in working with foreign professional sources are studied today by many experts in the field of foreign language teaching of master students. An analysis of their works suggests that when teaching master students to use translational techniques — linguistic and semantic transformations, the following principles of language teaching should be observed:

- taking into account the requirements of social and professional environment [9];
- cognitive accessibility and feasibility of translation tasks [10] with gradual complication of the material, through a step-by-step transition from adapted texts of general sectoral character to authentic scientific and professional texts.

For a comparative analysis, the results of four groups (42 people) of 2017–2018 school year (the Institute of Mechanical and Power Engineering named after V.P. Goryachkin, Russian State Agrarian University – Moscow Timiryazev Agricultural Academy) were taken where the traditional system of evaluation of independent work on preparing and presenting a report on the research topic and on writing a scientific article in accordance with the programs of the discipline "Professional Foreign Language" was used.

Traditional criteria for evaluating a report-presentation on the research topic and the writing of a scientific article were improved in the operating Curriculum of B1.B.03 "Professional Foreign Language" (English, German, French) for master students [11; 12].

Traditional criteria for evaluating a report-presentation on the research topic:

• "excellent"

- 1) the master student has almost no problems understanding issues related to communication;
- 2) he/she is able to correctly, fully and deeply express his/her thoughts on the subject under discussion in compliance with the norms of the language, using both factual information on the topic and his/her comments on the subject under discussion;
- 3) he/she has a free conversation, presenting not only the facts, but also his/her personal opinion on the topic of communication;
- 4) he/she owns the technique of conducting a conversation, as well as the ability to spontaneously respond to changes in the partner's speech behavior. The statements are complete and detailed, supported by adequate examples.

• "good"

- 1) the master student shows a good level of understanding of the communicative task; however, he/she is not ready to give immediate answers to all questions;
- 2) he/she speaks freely enough, presenting the facts, and in some cases his/her personal opinion on the topic of communication;
- 3) he/she owns the technique of participation in a conversation, but he/she does not always manage to

spontaneously respond to changes in the partner's speech behavior:

4) he/she owns compensatory skills, although their arsenal is not diverse enough. In speech, there are lexical and grammatical errors, but they do not interfere with communication.

· "satisfactory"

- 1) the master student demonstrates a general understanding of the questions addressed to him/her and a desire to participate in the conversation, however, the ability to get out of the difficulties arising in the process of communication is not enough expressed;
- 2) he/she can determine the need for this or that information and express his/her opinion using the simplest language forms, but he/she often needs to be repeated and explained the questions asked;
- 3) the answers do not differ in the variety of language tools used and are structurally uniform;
- 4) in the process of communication, there are often pauses. Sometimes he/she is illogical in statements and easily starts to use the learned text.

"unsatisfactory"

- 1) the master student has difficulty in understanding the speech addressed to him/her and in participating in communication;
- 2) he/she often asks to repeat the question and to speak more slowly. His/her answers consist of short phrases using a limited set of speech units and language models;
- 3) he/she is not able to adequately respond to the speech of participants in communication;
- 4) the utterance may contain lexical and grammatical errors that make it difficult to understand the statement and even make it impossible. There are significant errors in speech. He/she is reluctant to perform practical tasks, unable to fully and deeply express his/her thoughts, proceeding from his/her communicative role, and also logically substantiate his/her decision;
- 5) also, this mark is given in the case of unavailability of response, incorrect or incomplete answers to questions, or for incorrect examples or for passive participation in the work.

Traditional criteria for evaluating the writing of a scientific article:

• "excellent"

- 1) the master student is able to adequately use lexical units and grammatical constructions;
- 2) he/she clearly expresses thoughts and conveys the meaning of sentences and communicative intentions;
- 3) there are no errors with violations of linguistic norms and usus of modern speech.

• "good"

1) the master student is able to relatively adequately use lexical units and grammatical constructions;



- 2) he/she rather clearly expresses thoughts and transmits without serious distortion the meaning of sentences and communicative intentions;
- 3) however, there are communicatively permissible errors with violations of linguistic norms and usus of modern speech.
 - · "satisfactory"
- 1) the master student does not quite adequately use lexical units and grammatical structures;
- 2) he/she relatively satisfactorily expresses thoughts and transmits with certain distortions the meaning of sentences and communicative intentions;
- 3) there are some clear violations of the linguistic norms and usus of modern speech and distortion of the meaning of individual sentences and communicative intentions.
 - "unsatisfactory"
- 1) the master student demonstrates the inability to adequately use lexical units and grammatical constructions in foreign language speech as well as their incorrect translation;
- 2) he/she allows the distortion of the meaning of sentences and communicative intentions;
- 3) there are serious violations of both linguistic norms and the usus of modern speech.

Many researchers note the shortcomings of the traditional evaluating system, which include: evaluation subjectivity, low differentiating ability, focus on fixing deficiencies, low informative evaluation, the lack of clear rules for the conclusion of final mark, the limited scale from above.

For the four experimental groups of 2018–2019 school year (the Institute of Mechanical and Power Engineering named after V.P. Goryachkin, Russian State Agrarian University – Moscow Timiryazev Agricultural Academy), a point-rating system was proposed. At the beginning of the discipline, the teacher introduced the form, conditions and parameters for evaluating the control of independent work, that is, points, as well as the rules for transferring the rating points to the traditional marks.

In order to test the point-rating system, the authors developed technological maps of rating points for these types of master students' independent work. They were formed in accordance with the operating curriculum s of these courses and were brought to the attention of master students. To evaluate a report-presentation on the research topic, the following point-rating system was proposed and presented in Tab. 1:

TABLE I. THE FLOW CHART OF EVALUATING THE REPORT-PRESENTATION PREPARING

№	Positions evaluated	Rating points
1	Relevance of information	10
2	Quality of the set speech in a foreign language	30
3	Quality of writing in a foreign language	20
4	Knowledge and orientation in the presentation topic	5
5	Ability to discuss and quickly answer questions	20
6	Correctness of the computer presentation	5
7	Strict compliance with the established regulations	5
8	Compliance with deadlines	5
Total		100

Evaluation of the writing of a scientific article in a foreign language on the research topic was carried out according to the following parameters of a point-rating system presented in Tab. 2.

TABLE II. THE FLOW CHART OF EVALUATING THE SCIENTIFIC ARTICLE WRITING

№	Positions evaluated	Rating points
1	Drafting the introduction (justification of the relevance of the topic)	5
2	Presentation of the objective of the research	10
3	Statement of materials and methods	10
4	Presentation of results and their discussion	15
5	Drawing conclusions	10
6	Presentation of references	5
7	Quality of writing in a foreign language	30
8	Article annotation in Russian and in a foreign language	15
Total		100

To convert a total rating score into a normal five-point scale, the following ratio of points to traditional marks is established and given in Tab. 3:

TABLE III. THE COMPARATIVE EVALUATING SYSTEMS

Comparative evaluating systems			
Point-rating system	Traditional system		
>81	Excellent		
60–81	Good		
40–59	Satisfactory		
30–39	Unsatisfactory		
<30	Non-evaluated		

V. DISCUSSION OF THE RESULTS

A comparative analysis of the results of the evaluation of independent work on the preparation of a report-presentation on the research topic (Fig. 1) and on the writing of a scientific article (Fig. 2) is presented in the form of histograms.

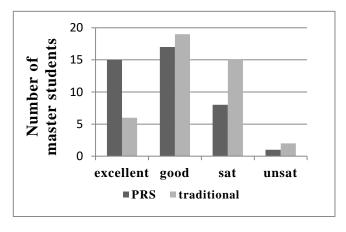


Fig. 1. The bar graph of the distribution of rating points and traditional marks for the report-presentation preparing



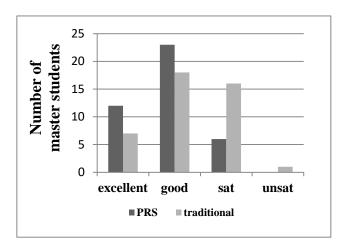


Fig. 2. The bar graph of the distribution of rating points and traditional marks for the scientific article writing

The results of master students whose independent work on report-presentation preparing and scientific article writing was evaluated in the point-rating system appeared higher in both cases.

The point-rating system showed a number of advantages in comparing with the traditional evaluating system:

- it allows to maintain systematic independent work of master students during the entire period of study;
- it establishes a link between the work of master students and the result of their work while the scientific article writing and the report-presentation preparing, which contributes to the improvement of the quality of the work performed;
- it enhances master students' responsibility for their learning in the process of building individual educational trajectories;
- it allows master students to plan and predict the final evaluation of independent work through certain indicators:
- it stimulates cognitive activity and creative approach to the choice of means and methods for the realization of goals [13].

In connection with a significant increase in the share of independent work for master students, the importance of active planning of the entire educational process is increasing. The point-rating system of evaluation should be clear to all participants in the educational process and take into account the opinion of master students themselves if the aim is to increase independent work motivation. Master students of 2018-2019 school year (the Institute of Engineering Mechanical and Power named V.P. Goryachkin, Russian State Agrarian University – Moscow Timiryazev Agricultural Academy) were asked to evaluate the point-rating system. As a result of the survey, their attitude to this system of evaluation of independent work was determined and presented in the chart (Fig. 3).

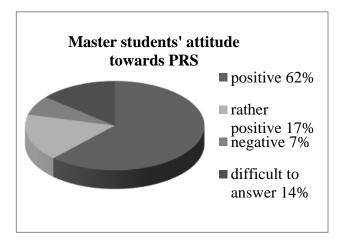


Fig. 3. The chart of the percentage distribution of master students' attitude towards PRS

The study showed that almost two-thirds of master students agree with the point-rating rating system proposed to them. This system, according to master students' opinions, is reasonable and stimulates the desire to study additional foreign professional sources, conduct research work to solve actual problems of practice. It also promotes creative work in other disciplines. The desire to solve creative problems contributes to self-organization and responsibility, learning motivation and focus [14].

VI. CONCLUSION

The degree of independence in learning a foreign language plays a great role. At the same time, the necessary skills and abilities to develop an action strategy, manage the project at all stages, apply modern communication technologies, identify and implement the priorities of their own activities and ways to improve it based on self-evaluation are formed. The use of the point-rating system for evaluating independent work develops the important intellectual qualities of the master students, ensuring their desire to master the knowledge and put it into practice.

The current stage of development of higher education is characterized by increasing requirements for its quality, which determines the need to find not only new learning technologies, but also the corresponding forms of control and evaluation of learning outcomes. The most important component of modern pedagogy is the point-rating system of knowledge evaluation, which gives the possibility to implement mechanisms to ensure the quality of learning outcomes, enhance the training of master students, and there are incentives to manage their own academic performance. The point-rating system provides an innovative approach to the organization of the educational process at the university, provides continuous and effective control and self-control over the formation of professional competencies, ensuring personal growth. The point-rating system allows the teacher to objectively evaluate and reliably differentiate the categories of students of multi-level learning outcomes, and the category of successful students with a high level of training in the discipline gets rid of exam certification and session stress. The point-rating system motivates the need for systematic independent activity of students during academic



and extracurricular time, activating interest in finding new solutions and developing scientific and creative activity [15; 16].

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