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REFLECTIVE TECHNOLOGIES IN SOLUTION OF THE TASKS OF STUDENTS' SCIENTIFIC RESEARCH INTERNSHIP

Diana I. Gasanova (a)*
*Corresponding author

(a) Dagestan State Pedagogical University, M. Yaragskogo, 57, Makhachkala, Russian Federation,
gasanovadiana@yandex.ru

Abstract

Scientific research internship is an important part of professional training. The urgency of the problem under study is determined by the need to develop scientific, methodological and organizational issues of planning and conducting research and development practice for undergraduate and graduate students. The purpose of the article is to identify problems and current issues of understanding, realise students' internship in the educational process of the university, as well as to identify effective aspects of reflective technologies as means of solving the tasks of students' scientific research internship. The leading method of researching this problem is a sociological survey and a technological approach, which allows us to consider reflection as means of solving the tasks of scientific research internship. In addition, the article describes the main components of the reflective pedagogical technology for the internship preparation, including: target setting component; content component; proper technological (organizational) component; expert evaluation component. There are topical issues of concern for a higher schoolteacher, specifically: how to organize scientific research internship; how to provide psychological, pedagogical and methodological support for the preparation and conducting scientific research internship. The author of this article finds a solution of these issues in the application of reflective educational technologies.

Keywords: Reflective pedagogical technology, competencies, reflective dialogue, reflective diary, scientific research internship.

1. Introduction

Various technologies are used to achieve learning and professional goals in educational practice: collective learning technologies, distance learning technologies, creative development technologies, modular learning technologies, interactive technologies, etc.

Fradkin (1994) defines pedagogical technologies as "systemic, conceptual, normative, objectified, invariant description of the activity of a teacher and a student, aimed at achieving an educational goal" (p. 67).

Reflective pedagogical technology is considered by us as a pedagogical phenomenon that concentrates the ability to solve several tasks: to help a student master theoretical, methodological, methodological, psychological, pedagogical and operational principles of the educational process, educational influence and interaction; to generalize this knowledge and skills; and most importantly - to help in personal self-improvement, in formation of such qualities as humanity, tolerance, sincerity, creativity, which are in demand today in teacher activities.

The reflective technology of preparing students for teaching internship is based on the following leading ideas: integration of pedagogical disciplines; intensification of the learning process through the use of reflective methods; diagnostic basis and content of academic disciplines. We single out the main components of the reflective pedagogical technology for internship preparation:

- target setting component;
- content component;
- proper technological (organizational) component;
- expert evaluation component.

The target setting for preparing students for teaching internship is defined by the Federal State Educational Standard of Higher Education (The Ministry of Science and Education of the Russian Federation, 2018); the main professional educational program of specialization (training program). It is expressed not only by the volume of necessary knowledge and skills, but also by a set of personal traits of a university student. It is noteworthy that the description of the target setting is diagnostic, i.e. it assumes its concretization taking into account regional conditions of the education system functioning. It is important that the target set in the competencies should coincide with the personal attitude and the goals that a student sets.

The purpose of the internship is to create conditions for testing theoretical knowledge and practical skills of students. Implementing the reflective technology of preparing for the internship, we direct (with the help of questions, problem situations, pedagogical tasks) student's understanding of the goal, the tasks of the internship, so that mastering practical skills acquires personal meaning. Reflective methods help us in this process: a reflective dialogue with questions "What do I expect from the internship", "How to win students' love and colleagues' authority?", "What result awaits me?", a reflective essay "Primary general education: problems and prospects", "How to realize teacher's potential", a reflective circle, etc. (Gasanova, 2016).

The content component of the reflective pedagogical technology includes an awareness of the goals and objectives of scientific research internship, as well as the synthesis and systematization of educational material for its use during the internship (general and specific learning objectives; scope and

nature of the content of educational material; focus on personality structures (competences, knowledge, skills, abilities). Reflective methods for solving tasks of the content component are: training, a reflective diary, a reflective circle, etc. (Gasanova, 2014).

Proper technological (organizational) component or procedural component is the technological process itself, its course, organization: methods, forms, means of teacher's activity and students' activities; control and management of students' cognitive activity. In the case of the use of reflective pedagogical technology, practice-oriented projects are being tested (lessons, extracurricular hours, conversations, trainings, parent meetings, elective courses, workshops). In the process of discussing the carried out activities we use a reflective analysis of the achieved goal and, solved tasks, an error analysis session, development of an action plan to eliminate the remarks made by mentors, methodologists, teachers and psychologists during teaching internship.

Control and evaluation component is the assessment of the quality of preparatory work for the internship, diagnosis of the results obtained, their correlation with the set goal and objectives.

2. Problem Statement

One of the most important changes in the process of reforming the educational system in Russia has been the introduction of a competence-based approach. It is currently viewed as the basis for changing values and educational goals. Federal Law "On the Education in the Russian Federation" of 2012, defining the very concept of education, characterizes it as "a set of acquired knowledge, skills, values, attitudes, experience and competences of a certain amount and complexity for the purposes of intellectual, spiritual and moral, creative, physical and (or) professional development of a person, and satisfaction of his or her educational needs and interests " (The State Duma, 2012, p. 223). Accordingly, the goal of the new educational paradigm is not to transfer ready-to-use knowledge to a student, but to train his or her ability to acquire this knowledge, develop skills and abilities to make independent decisions, self-education, as well as develop horizons and humanistic values formation, that is, raising the personality as a member of a group and society.

3. Research Questions

Competence is an integral characteristic of a person, which takes into account not only knowledge and skills, but also motivation to work, practical experience, the necessary level of intelligence development, personal qualities, and the degree of cultural and ethical norms assimilation (Khisamieva, 2012).

The concept of competence includes: knowledge and understanding (theoretical knowledge of the academic field, the ability to know and understand); knowledge of how to act (practical and operational application of knowledge and skills in specific situations); knowledge of how to exist (value aspect as an integral part of living with others in a social context) (Kharchenko & Busygin, 2007).

Modern Federal State educational standards of higher education enumerate the types of professional activities for graduates, who have mastered a certain Bachelor or Master program, indicate

professional tasks for which they must be prepared, and determine necessary competencies for achieving these goals.

Formation the society of a new type (informational, based on the constant growth of knowledge and information) and development the system of economic relations corresponding to this society imposes certain requirements to the professionals entering the labor markets and their competences. In that context the important role is played by knowledge, skills and abilities ensuring effective scientific, analytical, experimental, research and innovation activities (Meskov & Tatur, 2006).

This is evidenced in particular by the fact that out of 179 undergraduate training programs defined by the Ministry of Education and Science of the Russian Federation, 166 (i.e., 92.7%) in the FSES (Federal State Educational Standard) 3+ have research scientific work as one of the main activities and indicate corresponding competencies which a graduate must acquire during the training (The Ministry of Science and Education of the Russian Federation, 2018).

FSES of Higher Education (HE) 3 ++ for the undergraduate Training Program 44.03.05 (Pedagogical education) (The Ministry of Science and Education of the Russian Federation, 2018) specifies competencies that are to be formed, including CFC-1 (cross functional competence) - capability of searching, critical analysis and synthesis of information, applying a systematic approach to solving tasks; and GPC-8 (general professional competence) - capability of carrying out educational activities on the basis of special scientific knowledge, which a graduate must acquire during the training.

Block 2 "Internship", which is assigned to have not less than 60 credit points, includes research scientific work both in educational and on-the-job types of internship. In addition to training sessions in classes, formation of students' professional competencies occurs in the process of independent extracurricular activities, and above all during scientific research internship. Students' scientific research internship is a purposeful process of gradual mastering of all components of research activities on the basis of solving a specific task in conditions close to real professional activity (Lobova, 2004).

Scientific research internship in professional training of a modern specialist is an indicator of his or her readiness to carry out psychological and pedagogical activity in innovative educational conditions. For students, internship is an opportunity to test their theoretical knowledge, conduct scientific researches and replenish a methodical base with new and alternative technologies (Gasanova, 2011).

Scientific research internship is an integral part of the professional training of students, and after the introduction of competence-oriented graduate training, in our opinion, the most important component of the educational process. Scientific research internship, as well as some disciplines of a curriculum, deals with formation of certain competencies (cross functional, general professional, professional, special).

Scientific research internship allows a student to not only deeply study a topic or analyze a problem, but also helps to manifest and develop research skills (ability to see problem situations, develop versions, formulate hypotheses, search and select new information, use relevant training methods material, analyze the data, make conclusions based on the analyzed data). In parallel, other groups of professional competencies are being formed, such as communication skills, self-presentation skills, ability to reasonably defend one's own position and others (Galiullina, 2011).

In addition, students' scientific research internship can become the basis for identifying, selecting the most capable students.

4. Purpose of the Study

The purpose of the study is to identify problems and current issues of understanding, realise students' internship in the educational process of the university, as well as to identify effective aspects of reflective technologies as means of solving the tasks of students' scientific research internship.

5. Research Methods

In order to analyze the influence of scientific research internship on the formation of students' competencies necessary for their further successful professional activity, a sociological study was conducted among students of the Department of pre-school education, DSPU (Dagestan State Pedagogical University). 92 students took part in a survey.

5.1. Research experiment facilities

Respondents were Bachelor students of the 2nd, 3rd, 4th years of study, as well as Master students of the 1st and 2nd years of study. According to the survey, 25.5% of respondents conduct different scientific researches. For the overwhelming majority of respondents, the main forms of work are academic and research activities: course project accomplishment (99%), preparation of reports and essays (94.1%). 79.3% of the surveyed students take part in scientific conferences within the university, science weeks, etc.

5.2. Experiment stages

45 students' research papers (56.3% of the number of full-time students) were submitted to the qualifying contests of various statuses; 62.5% of the number of full-time students presented their scientific reports at student scientific conferences in 2018 and the first quarter of 2019.

Students are involved in conducting researches: 60.8% participated in writing of scientific articles. A significantly smaller number of respondents have experience of participating in various scientific competitions (19.5%), working in science societies and workshops (13%), presenting the results of their researches at regional, Russian, international conferences and forums (10.8%). Most students recognize the importance of doing research work in their professional training - 78.2% of respondents fully and partially agreed. 76% of the students surveyed are aware of the changes in requirements for professional qualifications that are dictated by modern society. It should be noted that students of full-time education agree with this idea to the greatest extent; extramural students are least interested (48.9%), and it is those who do not work in the area of the studied disciplines or do not work at all. Nevertheless, not all students are ready to accept successful research work as a criterion for the selection of qualified staff.

6. Findings

Analysis of the Agree/Disagree answers to the statement "Research work allows us to identify and select the most capable students" depending on the form of study showed that extramural students agree less than full-time students. But it should be noted that extramural students working in educational organizations in the area of the studied disciplines agree with this statement.

In the view of the respondents, creative attitude to labor, which is formed in the process of research activity, increases their competitiveness in the labor market. This point of view is typical, first of all, for Master students. At the same time, as was shown by the distribution of answers to the question "Which of the following can help you in finding a job after graduation from a university?" students are not inclined to associate the results of scientific activities with individual career growth. Participation in competitions of scientific projects, won scientific grants, experience of participation in scientific conferences, published scientific articles are last among the factors contributing to the graduate's employment.

The absence in the respondents' views of the direct dependence of future employment on effective student research activity during training does not exclude the fact that performing this activity, respondents acquire certain skills and abilities. According to the data obtained in the research, according to the respondents, the main three competencies formed by student research activity are: the ability to work with information, self-education skills, and creative abilities.

The implementation of research activity requires students to have certain personal traits and at the same time develops them. Among the most significant, respondents named responsibility (64.2%), initiative (52.5%), activity (49%), diligence (41.2%), sense of duty (40.7%). In the opinion of students, such qualities as interpersonal skills (13.7%), tolerance (2.5%), and politeness (2%) are of little demand in this area.

Thus, transformation of society has led to a change in the requirements imposed by society and the labor market in relation to graduates of Russian universities. First of all, skills and abilities of research activities have acquired particular importance. The conducted sociological research allows us to say that the entire sample under study is more or less familiar with research work, at least at the level of academic work (course projects, reports, essays). Students are aware of the importance of this type of extracurricular work, but not all of them are willing to deeply engage research work and see it as an effective channel for future employment and career growth.

FSES of HE (The Ministry of Science and Education of the Russian Federation, 2018) as the results of education regulates the formation of competencies among graduates, but technologies and tools for the formation are suggested to be chosen by a teacher. The experience of experimental research allows us to state that reflective technologies are an effective means in preparing for the internship, as well as a guarantee of its successful accomplishment.

7. Conclusion

The basis of the reflective pedagogical technology is the regularity of the complete manageability of the pedagogical process, its planning and the ability to analyze it through step-by-step reproduction.

The essence of a reflective pedagogical technology is to guarantee the achievement of well-defined goals, relying on the constant understanding of one's own actions, steps, behavior, and analysis of the reasons for one's behavior. Therefore, the technology of setting goals related to personal meanings becomes the most important prerequisite for reflective educational technology.

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