Assessing Activity of Pedagogical College Students as a Study Activation Tool

Lidia Gennadievna Shestakova, Yekaterina Anatolievna Kharitonova and Tatiana Vasilievna Rikhter*

Perm State National Research University, Solikamsk State Pedagogical Institute, Perm, Russian Federation; tatyana_rikhter@mail.ru; hariton59@bk.ru, L_shestakowa@yandex.ru

Abstract

Background/Objective: The article is aimed at analyzing the effect of assessing activity of pedagogical college students on increasing study activation. Methods: The findings are based on the analysis of the scholarly academic studies. A questionnaire survey was applied to identify the impact of the assessing activity of students on the improvement of their study activation level. Findings: Assessing skills of future teachers within the Federal State College Educational Standard have been identified; various points of view to determine the concept of activation have been considered, students’ assessing activity as an effective activation means and its aspects, subject matter and stages have been reviewed. Based on the analysis of the results of theoretical and experimental work the main assessing management tools have been distinguished, such as: self-assessment and peer assessment, forms of educational work have been correlated with students’ assessment activities. Carried out experimental work has enabled to identify the conditions under which the use of self-assessment and peer assessment will be effective for activating an educational process. Types of training activity have been related to student’s activity. A role of assessing activity of pedagogical college students has been defined. An analysis to determine the effect of assessing activity of students on increasing activation has been performed. Applications/Improvement: The scientific novelty of the research lies in identification of assessing skills of the future teachers within the FSCES, determination of the main assessing management tools as a means of enhancing the educational process in high school, correlation of forms of educational work with the students’ assessing activities.

Keywords: Activation, Self-Assessment, Students’ Assessing Activity

1. Introduction

College education focusing on forming competencies as a set of learning results (knowledge, abilities, skills, and expertise) implies creation of pedagogical conditions for a student to be able to prove himself as an intellectual and actively perceptive individual, who can express his social position and individuality1. Such European authors as2,3 and others devoted their work to the problems of competency formation.

The issues of activating the educational process are not new in the science area. They are as historically old, as the education itself. Thus, in the 17th century4,5 urged to ‘teach children to think’. At the beginning of the 19th century the idea of study activation by demonstrativeness, observation and independent conclusions was persistently expressed by J.H. Pestalozzi (via demonstrativeness, observation and independent conclusions)5–7, (by developing children’s amateur performance)5–7, (by stating the task to teach to learn),5,7 (by a projects method, creative thinking).5,7 Soviet teachers of the 20s and 30s of the 20th century, pursued methods of active studying.10,11 Further, the ideas of activation became the basis of developmental learning,12 problem-based learning13. Various aspects of the activation challenge are now unraveled by others.

Various aspects of the studying activity activation with the use of IT, including remote technologies, are discussed by such authors as15–17 and other scholars.

*Author for correspondence
2. Method

The purpose of the article is to analyze the impact of assessing activity of pedagogical college students on increasing the study activation level.

The research tasks include:

- to determine assessing skills of the future teachers within the Federal State College Educational Standard;
- to identify the main tools for assessing activity arrangement as a means of enhancing the educational process in high school;
- to correlate the forms of educational work with the students’ assessing activities;
- to determine the effect of students’ assessing activities on the improvement of the study activation level;
- to identify the conditions of the effective use of self-assessment and peer assessment.
- The research methods include:
  - the analysis of educational research publications on the subject;
  - the survey questionnaire

To determine assessing skills of future teachers within the Federal State College Educational Standard, corresponding scientific and pedagogic research was analyzed, various points of view to determine the concept of activation were considered, and assessing activity of students as an effective activation means, and its aspects, subject matter and stages were reviewed.

Basic assessing management tools, such as self-assessment and peer assessment, were determined and types of educational activity were related to assessing activity of students, based on the theoretical and experimental work analysis.

To determine a role of assessing activity of pedagogical college students as means of study activation, a research was conducted on the basis of the Solikamsk State Pedagogical University, a branch of the Perm State University Federal State Budgetary Educational Institution of Higher Professional Education. This research was done as a part of studying and practical events, where students performed self-assessment of special professional skills formedness. This research was about describing types of activity that a student has mastered in accordance with this competency, self-assessment of competency proficiency (on the scale of 0 to 4) and stating tasks for professional self-improvement.

A questionnaire survey was used to determine the effect of assessing activity of students on increasing activation, and two groups (a control and experimental group) participated in the survey.

Our experimental work allowed us to determine conditions for an effective application of self-assessment and peer assessment to activation.

3. Results

3.1 Determining Assessing Skills of Future Teachers within the Federal State College Educational Standard

Let us consider the concept of activation for pedagogical purpose, understands activation as an ongoing process of managing students’ activity, motivations of energetic and targeted study, overcoming any falls, passivity and stereotypes.

According to activation means the following:

1) a degree of order and consistency of individual parts of the whole;
2) a set of targeted processes and actions of a teacher leading to cognitive activity;
3) interrelated ways of ordering and regulating cognitive acts and actions of parties to the studying and cognitive process.

A number of authors determine a set of essential conditions for activating studying activity of students, such as: awareness of studying objectives and tasks; mastering worldview knowledge; awareness of theoretical and practical importance of the material learned; discovering perspectives of developing conceptual essence; implementation of a complex approach in class; emotional presentation of information; creation of a friendly atmosphere in class; optimum combination of easiness and hardness of the material; focusing on solving practice-oriented (professional) tasks in the studying activity.

Assessing activity of students will be considered as activation means for the purpose of this research.

Federal State College Educational Standards pull colleges in the direction of reviewing the contents of studying and professional activity of students, with formation of assessing activity of future graduates to be an essential part of this process. The educational process now focuses
on a control and assessment component that requires systematic tracking, diagnosis and correction of study and outcomes.

Multiple studies of Russian scientists and foreign scholars, such as 23-28 that discuss assessing functions and abilities of a human, specifics of the process of preparing a future teacher to professional assessment from various points of view are devoted to assessing activity of a future teacher. 29,30. 20 discuss the specifics of assessing self-guided study.

Activity that is conducted in association with a student and ensures formation of a judgment of parties to the assessing activity by assessing activity (while referring to Ye.G. Matvievskaia). An objective of the assessing activity is a selection among the variety of values those that are most pressing for a person at this moment 31.

Distinguishes between an axiological (development of such indicators of assessing activity of a teacher and students as volume, depth and self-reliance of the assessment and full correspondence to the value affected), level (joint activity of the teacher and student to form self-assessment of the student against an active impact of the assessing activity of the teacher upon the student that is expressed in judgment, characteristics and score of the teacher) and stimulating (original attitude of the teacher towards achievements of the student to make them as high as possible) aspects of assessing activity 32.

While disclosing the nature of assessing activity 33, speaks of the necessity to focus attention on developing ability in students of their own analytical activity, independence, forming social values, extending their cooperation experience. According to the author, an adequate assessment by students of outcomes of their activity shapes an assessing mechanism relaying on assessing themselves as an individual, their objectives, and degree of achievement. Thus and so, maximum involvement of students in the assessing process leads to activation and acceptance by them of their responsibility for the outcomes of their studying activity.

Common features that characterize the assessing activity, such as: purposeful nature, two-sideness, unity of the internal and external, objective and subjective, co-relation of assessment, self-assessment and peer assessment, regulation and self-regulation may be pointed out against the variety of views.

A. N. Subbotko distinguishes between the following stages of assessing activity:

- preparation for an assessment (acceptance of the assessment objective, selection or development of an assessment technique);
- conduction of the very assessment (collection of information about the item to be assessed in accordance with the accepted technique, shaping an image of the item to be assessed, stating the degree of correspondence of the image and reference by comparison, control); and
- analysis and presentation of the final score as an outcome of the assessing process.

Mastering knowledge of fundamental assessment theory, experience in assessing activity and emotional and value-conscious attitude towards tools of such activity is an outcome of formation of the assessing activity of a future teacher.

The analysis of corresponding pedagogic research allowed us to determine assessing skills of future teachers within the Federal State College Educational Standard, such as: determining behavior and activity criteria for students, selection of effective assessing forms and techniques, planning of assessing impacts, reflection of one's own assessing activity.

3.2 Determining basic Assessing Management Tools as means of College Educational Process Activation, Relating Types of Educational Activity to Student’s Assessing Activity

Introduction of assessment by a student of outcomes of his/her own activity (self-assessment) or activity of another student (peer assessment) is a key assessing management tool as college educational process activation means.

According to S. N. Degtariev, this means assessment by an individual of himself, his abilities, qualities, merits and demerits and place among other people. Self-assessment is usually associated with the progress (and specifics) of a task (type of activity) fulfilled, advantages and disadvantages, strengths and weaknesses. A comprehensive and extensive specification of own outcomes is given in the process of self-assessment, own achievements and problems that appeared during task fulfillment are analyzed and ways of self-improvement are established. Table 1 gives forms of studying activity, where self-assess-
ment (peer assessment) of students can be used for study activation.

Table 1 demonstrates that a student participates in various types of studying and practical classes during his study and assesses the product of his own activity, which facilitates activation.

<table>
<thead>
<tr>
<th>Types of studying and practical events</th>
<th>Types of student’s activity.</th>
<th>Student’s assessing activity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>listening and taking notes</td>
<td>self-assessment of understanding the material, contents of the lecture</td>
</tr>
<tr>
<td>Seminar</td>
<td>complex assignments, crediting and presentation of laboratory assignments, presentation of essays, speeches, implementation of the final project, writing texts, cases, professional tasks.</td>
<td>discussing homework, self-assessment (peer assessment) of tests, cases, professional tasks done, self-assessment (peer assessment) of outcomes of the essay, speech or final project.</td>
</tr>
<tr>
<td>Credit/ exam</td>
<td>presentation of the final project, practical situations, completion of tests.</td>
<td>self-assessment (peer assessment) of practical situations discussed, self-assessment (peer assessment) of outcomes of the final project, tests.</td>
</tr>
<tr>
<td>Practical training</td>
<td>demonstrating skills, filling a practical training diary.</td>
<td>compilation and presentation of a report on the events, practical training, self-analysis</td>
</tr>
<tr>
<td>Course paper</td>
<td>participation in competitions of professionally oriented assignments, student scientific and practical conferences, presentation of the assignment, preparation and presentation of the assignment.</td>
<td>presentation of the assignment for review (peer assessment).</td>
</tr>
</tbody>
</table>

Table 1. Correlation of educational activity forms with student’s assessing activity

3.3 Determining a Role of Assessing Activity of Pedagogical College Students

To determine a role of assessing activity of pedagogical college students as means of study activation, we conducted a research on the basis of the Solikamsk State Pedagogical University, a branch of the Perm State University Federal State Budgetary Educational Institution of Higher Professional Education. Students of various years and majors participated in the research.

This research was done as a part of studying and practical events, where students performed self-assessment of special professional skills formedness (Table 2), this research is about describing types of activities that a student has mastered, in accordance with this competency, self-assessment of competencies proficiency (on the scale of 0 to 4) and stating tasks for professional self-improvement.

Students of an experimental group (Pedagogical education, mastering in Mathematics) participated in this research. Let us present data of assessing activity for the second and fourth year. Formedness of 6 competencies that are specified in the bachelor curriculum was assessed.

Thus and so, second year students specified the following in field 2 ‘Types of activities that a student mastered (self-assessment)’, while assessing competency SKM-1 (has mastered fundamental principles of classical sections of mathematical science, basic mathematical ideas and methods, a system of basic mathematical structure and axiomatic method):

- I am familiar with basic concepts of algebra, geometry, mathematical analysis, and I am capable of applying such concepts;
- I take notes, speak at seminars, generalize and analyze information;
- I know how to take notes, solve problems, examples.
- They specify the following in field 4 ‘Tasks for professional self-improvement’:
  - I need to pay more attention to studying;
  - I need to master new knowledge and skills, continue to speak at seminars and learn how to use an axiomatic method;
  - I need to continue to work upon mastering new knowledge and ideas.
- Fourth year students specified the following in field 2 ‘Description of types of activity that a stu-
dent mastered (self-assessment), while assessing competency SKM-4 (mastered mathematics as a universal scientific language, means of simulating phenomena and processes, is capable of using mathematical model build-up for solving practical problems, understands quality criteria of mathematic research, principles of experimental and empirical testing of scientific theories):

• am capable of using mathematical for processing experiment findings, however, not to the full extent;
• am capable of scientific theory experiment, am familiar with mathematical research criteria;
• can simulate skills and processes, can build models to solve problems.

In field 4 'Tasks for professional self-improvement':

• learn how to use my skills in practice;
• learn how to check scientific theories by experiment;
• apply knowledge in other areas of science, and continue working upon quality criteria of mathematic research.

Data were processed by means of analyzing self-assessment of students and counting total scores for each competency: 6-11 points - I have necessary knowledge; 12-17 points - I have necessary skills; 18-23 points - I believe I mastered this competency, but do not have any activity experience; 4-I mastered, I have activity experience in accordance with this competency.

Data of self-assessment of special professional competencies proficiency by second and fourth year students have been presented in Figure 1.

### Table 2. Self-assessment of special professional skills formedness

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Types of activities mastered by a student (self-assessment).</th>
<th>Assessment of competency proficiency (on the scale 0 to 4).</th>
<th>Tasks for professional self-improvement.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>List of discipline competencies</td>
<td>Please specify types of activities or knowledge that comprise this competency that you mastered. You may use the following verbs: know, can, capable of, ready, etc.</td>
<td>Criteria for scoring: 0-I did not master; 1-I have necessary knowledge; 2-I have necessary skills; 3-I believe I mastered this competency, but do not have any activity experience; 4-I mastered, I have activity experience in accordance with this competency.</td>
<td>You should give your score, based on the things that you have not mastered yet or have not mastered properly. You may use the following verbs: necessary, required, continue work, master etc.</td>
</tr>
</tbody>
</table>

Figure 1. Results of self-assessment of special professional skills formedness in students of experimental group

Peer assessment and/or demonstration by students of professional competencies in the process of studying activity is done in the same way. Peer assessment is used in work with students of the same year and different years. It is most often done in classes, where students demonstrate results of their individual, creative or practical assignments.

### 3.4 Analyzing the Effect of Student’s Assessing Activity on Increasing Activation

An analysis to determine the effect of assessing activity of students on increasing activation was done. Two groups (a control and experimental group) participated in the questionnaire survey. Students of both groups provided their answers to five questions, such as:

1. Do you feel it is important to know what professional competencies should a discipline that you study develop? Why (please elaborate)?
2. What do you get from self-assessment of professional competencies proficiency?

3. What do you get from peer assessment of professional competencies proficiency (demonstration)?

4. Can you consider self-assessment and peer assessment as activation means? (Please elaborate)

5. Can you consider self-assessment and peer assessment as means of motivation and raising of student’s interest? (Please elaborate)

Students of the experimental answer in the following way the first question of importance of knowing what professional competencies should a discipline they study develop:

- I believe it is important to know for the purpose of making my future professional work easier.
- Yes, I believe that this knowledge is an example of our target.
- Yes, it provides you with an opportunity to assess yourself in terms of how well you study the discipline.
- It is important, as long as a student must be familiar with quality requirements to his work regarding this discipline.
- In response to the second question (What do you get from self-assessment of professional competencies proficiency?) students state the following:
  - ability to self-develop;
  - self-confidence, knowing that you will be useful professionally;
  - it allows to learn the degree of competencies formedness, obviously demonstrates strengths and weaknesses, raises motivation to self-improvement in ways of establishing and implementing personal development;
  - Yes, you can, as long as assessment of professional competencies discloses their formation process, which allows a student to achieve professional becoming.
  - an ability to assess yourself, which, in its turn, shows aspects that you should develop.

In response to the third question (What do you get from peer assessment of professional competencies proficiency (demonstration)?) students point out the following:

- it allows to identify knowledge gaps, specifics that were not obvious before;
- to assess how competent and professional a teacher and a student are in their professional activity;
- these processes are a necessary component of professional becoming, as long as you can identify gaps in your work and correct them, while assessing yourself and others;
- an ability to compare yourself to your fellow students, which, in its turn, increases motivation to self-development.

Students give the following response to the fourth question (Can you consider self-assessment and peer assessment as activation means?):

- Yes, you can. This activity allows to improve professionally;
- Yes, as long as your motivation to self-development rises, while you compare yourself to others;
- You can, as long as self-assessment and peer assessment allows you to put yourself into perspective and compare with others;
- Yes, as long as we are able to develop, analyze ourselves and correct our activity, while we gain pedagogical experience.

They give the following answers to the fifth question (Can you consider self-assessment and peer assessment as means of motivation and raising of student’s interest?):

- Yes, you can. When you assess yourself, your interest in self-development rises.
- You can. When a student assesses himself, he analyses his assignments, speech, and further plans tasks for self-improvement. With self-assessment, a student does his assignment more thorough and interest;
- You can, as long as it allows to interest student in maintaining their quality and motivate to self-improvement.
- Students of the control group provide one-word answers and do not elaborate. They do not relate assessing activity to activation, motivation and interest at all, or consider the relation to be weak.

3.5 Determining Conditions for an Effective Application of Self-assessment and Peer Assessment to Activation

It has been found in the process that the use of self-assessment (self-analysis) for the purpose of activation will be
effective, provided a number of conditions are fulfilled. First of all, objectives and attitudes of the student correspond to objectives of the teacher. Provided this condition is fulfilled, the students in the studying process will be active; otherwise quasiactivity (to download task solution from the Internet, borrow it from a senior, etc.) will most likely be expressed. Second of all, the student has a clear picture of the training outcome regarding the educational program as a whole and a certain discipline and performance of a certain job (e.g., individual and self-guided task, practicum, course paper, graduation thesis etc.) in particular. Third of all, the student has been provided with means for managing outcome self-assessment (e.g., reference, example). Fourth of all, the student has got real possibilities (faces on a regular basis conditions) for stating and discussing tasks for further improvement of the knowledge, skills and competencies available.

Thus, assessing activity of students is a tool of activating studying activity of pedagogical college students. It allows identifying the level of competencies formedness on the part of student. The student accesses the ability to apply knowledge and skills, which allows him to correct his studying process, and allows the teacher to select most effective work forms and methods.

4. Conclusion

The effect of assessing activity of pedagogical college students on increasing study activation has been analyzed within this research.

The research brought us to the following scientific outcomes:

1. Assessing skills of future teachers within the Federal State College Educational Standard have been identified.
2. Basic assessing management tools as means of activating an educational process at a college have been determined.
3. Types of educational activity have been related to student’s activity.
4. The role of assessing activity of pedagogical college students has been defined.
5. The analysis to determine the effect of assessing activity of students on increasing activation has been done.
6. The conditions for an effective application of self-assessment and peer assessment to activation have been determined.

These outcomes can be applied to an educational process of colleges, refreshment courses for scientists and teachers, for master classes, problem groups and creative laboratories.

Further research areas are associated with developing a conceptual process model for developing future teacher’s assessment activity.

Scientific contribution to the problem of the study consists in identification of conditions for effective use of self-assessment and peer assessment to enhance the learning process.

5. References

14. Shestakova LG. Nonlinear thinking style forming characteristics by school students tool as a historical and scientific
17. Richter TV. Distance learning technologies features for the cognitive independence development students at the mastery of computer science in pedagogical institutes. American Journal of Pedagogy and Education. 2013:21–5.
31. Pachina AG. Value-oriented assessing activity of a teacher as a condition for forming a value-based attitude of students to studying activity. Modern Challenges of Science and Education. 2015.