STUDENTS’ INDEPENDENT WORK AS A KIND OF COGNITIVE ACTIVITY
AT TYUMEN INDUSTRIAL UNIVERSITY
Ludmila N. Zanfir
Tyumen Industrial University, Russia.
Email: Uni.state-2019@yandex.ru

Article History: Received on 25th July 2019, Revised on 31st August 2019, Published on 03rd October 2019

Abstract

Purpose: The article conducts the study of conditions for improving the quality of the independent work of students of higher educational institutions.

Methodology: The study was carried out on the basis of which the practical-oriented approaches were chosen most suitable for the organization of independent work of students. Among them were singled out: competent, interactive-productive. Practical-oriented methods (training, group work, business games, design methods, modeling and simulation sessions with representatives of different companies and organizations) are highlighted.

Result: We have established that properly organized independent work allows students to form a systematic mindset; the ability to properly isolate and analyze problems, to apply a systemic approach in solving problems; motivation for training; Creativity.

Applications: This research can be used for universities and higher education students.

Novelty/Originality: In this research, the model of the students’ independent work is presented in a comprehensive and complete manner.

Keywords: Practical-oriented approach, professional educational organizations, graduate, student, independent work.

INTRODUCTION

In the modern world, employers need graduates who are well prepared for professional activities, ready to independently solve non-standard tasks, mobile and independent. The formation of this type of graduate process is quite complex and multifaceted. For this purpose, every year professional educational organizations create conditions for improvement of independent work of students. The student should have a high level of competitiveness in the labor market by the time of graduation, so the students have important practice experience in future professional activity.

Researchers have been engaged in the study of independent practical experience for many years, but this topic remains relevant today, as the needs of employers and students themselves over time change, forcing to find more suitable ways of formation of the independent highly skilled graduate. Considering the possibilities of practical-oriented technologies in the organization of independent work of students of the higher educational institution, we have conducted the research on the basis of which the most suitable for this process were established Practice-oriented methods. Among them we allocate training, group work, business games, design methods, modeling and simulation sessions with representatives of various companies and organizations (Ilyashenko, 2018; Matandare, 2018; Torquato et al, 2018).

The seven advanced countries in the world have ranked the highest in research and development research, which reflects the difference between advanced countries and other countries in their research facilities, conditions, and platforms. In fact, student’s independent works are a way of excellence and differentiation of countries. The importance of student’s independent works in each country contributes to the development and improvement of their cognitive structure and provides for mental growth and prosperity (Khorrami et al, 2015). Thus, it can be claimed that there is a direct relationship between the level of independent student activity and the cognitive power of students, and as long as universities do not exploit the achievements of independent, applied, and developmental works in social, economic, cultural and educational planning, students will not be able to make advanced and sustainable cognitive development (Iravani et al, 2015). Given the importance of independent works at the university, the role of research works is increasingly important. Independent activity is recognized as the engine of the thorough and sustainable development of cognitive works. The importance of independent works is such that the evaluation of students’ academic records, the number of papers submitted, the amount of stimulus and the volume of investment in the research sector are considered as development indicators (Baykalova et al, 2018; Rincon-Flores et al., 2018).

METHODOLOGY

The work can be used in the further development of the problem of self-study of students of professional educational institutions.

The research was conducted on the basis of the branch of Tyumen Industrial University in Surgut. 120 students participated (from the first to the fourth year) the polls were conducted on the following topics: "The most preferable types of independent work", "degree of independence of students in the performance of independent work", "the most comfortable for Students the type of independent work "," factors increase the quality of independent work of students ","
the amount of time that a student takes to perform independent work outside the classroom. " On the basis of the received data, we have determined that to form the conditions for independent work of student’s important approaches are: competent, interactive-productive approaches. Also, if the student possesses motivational-volitional, operational and reflexive component, it is possible to speak about high level of independence and high degree of its preparation to professional activity.

RESULTS AND DISCUSSIONS

The concept of “independent work” is defined by a number of authors as a kind of educational activity, which is formed in conditions of reduction of direct help of the teacher, which not only promotes conscious and strong mastering of knowledge, but also Forms cognitive independence as a trait of personality (Bulaeva, 2017). We emphasize that independent work is an activator of mental activity and a condition of successful mastering of knowledge, skills, and skills.

Independent work is considered as:
- Type of activity stimulating activity of students and their interest to cognition, their independence (Barber, 2013);
- The set of measures providing management of different kinds of independent activities of students.

Also, independent work can be interpreted as types of individual, group cognitive activity of students, realized in classes and extracurricular without the direct help of the teacher.

That is, we can say that the essence of the concept of “independent work” is the lack of direct guidance of the teacher and the reduction of his assistance in the cognitive activities of the student (Arkhipova, e al. 2018). It is impossible not to specify the important role of consciousness and motivation of students (Ilyashenko, 2018).

Independent work allows you to:
- To develop the levels of mental activity from the lowest to the higher (Lubov, 2018);
- To create in students the installation to continuous cognitive activity, the search of additional information (Markova, 2018).

Some scientists subdivide independent activity into three types:
- Obtaining new knowledge;
- Use of experience already gained in practice;
- Repetition and examination of students’ knowledge (Smirnova, 2017).

Also, independent work can be divided into several groups: -Development of independence in acquiring new knowledge;
- Consolidation of knowledge (Tsyplakova, 2016);
- Development of skills to apply their knowledge in practice;
- Development of creative skills (Smirnova, 2017).

We believe that for the organization of quality independent activity of students it is important to use practical-oriented technologies.

The more students can immerse themselves in conditions close to the professional, the easier it will be to adapt in real working conditions (Smirnova, 2017).

It should be noted that the value of practical-oriented technologies consists of a transition from assessment of knowledge by the teacher to joint evaluation of his work by students. Students are less dependent on the teacher, forming their own opinion, developing the skill of independence.

Students were asked to choose the most preferable types of independent work (classroom and extracurricular).

Table 1: Results of students’ questionnaires on their identification of the most preferable types of independent works

| The most preferable types of work writing essays and annotations | Choice of answer options by students (%) |
|---------------------------------------------------------------|-----------------------------------------|
| Design of layouts, production of stands and posters           | 1.5                                     |
| Reports and articles for scientific and practical conferences | 2.8                                     |
| drawing up diagrams, tables, figures and diagrams             |                                         |
| Performance of laboratory, practical and control works        | 3                                       |
| Compilation of crossword puzzles                              | 14.8                                    |
| Study of Lecture Notes                                        | 5.1                                     |
| Creation of multimedia presentations preparation for seminars,| 5.9                                     |
| development of business games                                 |                                         |
The most preferable types of work: writing essays and annotations (25.2%), preparation and writing of abstracts (8.5%), working with texts, outlining articles, paragraphs of books, etc. (19.6%), working with audio and video materials (11%), and design of layouts, production of stands and posters (32.1%).

The most popular kind of independent work among students is to work with audio and video materials. This indicator is logical because visualization contributes to better absorption of material and increases motivation to self-cognitive activity. Less popular are: preparation of abstracts, work with texts. This result, in our opinion, was also possible to predict, as these are the most habitual types of independent activity, both in the classroom and in the non-classroom.

Students tend to perform simpler and more familiar tasks, for the most part, it refers to junior courses, but a sufficient percentage of students do not oppose activities requiring creative initiative and self-search for solutions Existing problem.

The importance of creativity in teaching is impossible to overestimate. The effectiveness of the development of creative potential depends on the inclusion of the student in the work to solve the problem (Kutepov, 2017).

It should be noted that the independent activity of the student does not have a proper share of effectiveness without managing the process teacher. Figure 1 shows the degree of self-sufficiency of students in performing certain jobs.

| Types of independent work | Choice of answer options by students (%) |
|---------------------------|------------------------------------------|
| Reproducing – performed according to the teacher's sample; Tasks are repeated and easily recognizable | 57.1 |
| Reconstructive – The accumulated knowledge and the known way of acting in accordance with the instructions of the teacher are used; Tasks are partially familiar | 23.8 |
| Heuristic (partially-search) – Accumulation of new experience; Tasks unfamiliar, non-standard creative – independent activity on formation of new knowledge and skills, methods of research activity | 7.9 |
| Types of independent work | 11.2 |

Table 2: The most comfortable for student’s type of independent work

Figure 1: Degree of autonomy of students in performing independent work

Most students (41.2%) choose work in a pair, completely individual performance of the job prefer only 13.7% of students, however, it speaks about high enough level of independence of this group of respondents. The other indicators are average.

The next poll is aimed at choosing the most comfortable type of independent work where students feel most confident.
The results showed that reproductive work is the most convenient. Students feel a lot of confidence when doing work with familiar, typical tasks on the model. As for creative work, but it is a more complex type of activity than a heuristic, but it chooses a larger percentage of students because creativity for the student is familiar and therefore more attractive. Then we have established factors that, according to students, improve the quality of independent work.

**Table 3: Factors increase the quality of independent work of students**

| Factors                                                                 | Student selection (%) |
|------------------------------------------------------------------------|-----------------------|
| Interest:                                                              | 43.1                  |
| - Creative component of independent work;                              |                       |
| - Possibility to get additional points;                                |                       |
| - Use of results of independent activity in the diploma work or in preparation for the Olympiad. |                       |
| A large number of practices                                            | 29.4                  |
| Self-discipline and other qualities of the student himself             | 11.9                  |
| Development of a high level of work with information sources           | 7.8                   |
| To learn how it is necessary to organize the independent activity      | 7.8                   |

So, the fundamental factor in improving the quality of independent work students singled out interest. It is a kind of driving force for all students training. In the second-place trainees put such a factor as a large number of practices. In our opinion, this is true and quite natural, because the more students get practical skills, the easier they will work independently.

Next, we have identified the amount of time allotted by the student to perform extracurricular independent work.

**Table 4: The amount of time a student takes to perform independent work outside the classroom**

| Time                                                                 | Student selection (%) |
|---------------------------------------------------------------------|-----------------------|
| I do self-training 2-3 times a week                                  | 11.9                  |
| I don't work on my own every day                                     | 23.1                  |
| 30 minutes a day                                                     | 10                    |
| 1 hour per day                                                       | 9.3                   |
| 2 hours per day                                                      | 25                    |
| 3-4 hours per day                                                    | 14                    |
| More than 4 hours per day                                            | 6.7                   |

After analyzing the data obtained, we can see that two groups of students are singled out. One of them works 2 hours each day, and the second spends too little time on training, we talk about a group of students, which works independently not every day. We propose to improve the indicators as follows.

Based on the results of the polls, we decided to identify approaches to the organization of independent work, depending on the level of training of students to such activities.

We have highlighted:

- Competence approach. Since it arose because of the need to quickly adapt a person to constantly changing conditions, it also corresponds to the situation of the student's need for practical work. The whole point of the organization of the educational process in accordance with the competence approach is to create conditions for students to develop the experience of the independent solution of various tasks (Ajeenkya, 2014).

is an interactive and productive approach. As a result of surveys, we have established the desire of students to engage in activities related to the performance of familiar tasks, the most attractive and familiar will be the interaction of interactive character in the formation of the initial level of independent work (Manikandan, 2018).

These approaches imply open content of education, the possibility of choice of educational material, expansion of emotional and communicative components of training (Abramova, 2017).

Realizing these approaches, in the course of studying in the higher educational institutions considered by us, the following methods of practical-oriented technologies are used: training, group work, business games, design methods, modeling and simulation Classes with representatives of different companies and organizations (Bicheva, 2017).

The great influence on the formation of students is rendered by experts-practice. They interact with students in the course of thematic evenings, conferences on the results of practice with the participation of employers, excursions to specialized exhibitions, retreats all this has a beneficial effect on the formation Learning as an independent specialist.

Practical-oriented technologies allow forming students:

- Systemality of thinking;
- Ability to properly allocate and analyze problems (Markova, 2017);
- The skill of application of system approach in problem-solving (Vaganova, 2017);
- The motivation for training;
- Creative Abilities (Braine, 2013).

In order to prove the efficiency of using practical-oriented methods in the organization of independent work of students, we have installed the components of levels of independent work:

- Motivational and volitional. The student shows cognitive activity and initiative, perseverance in achieving goals, self-control, and self-organization (Vandergrift, 2007);
- Operating. The student possesses skills of cognitive activity, applies general educational skills (Vaganova, 2017);
- Reflexive. The student is ready for self-knowledge, self-analysis and independent activity (Iltaldinova, 2017).

By the fourth course, students acquire all three components and as a result are independent and creative specialists. The developed ability to reflection speaks about the high level of student's independence.

CONCLUSION

After the analysis, we found out that independent work is a kind of educational activity having a certain sequence of actions, which leads the student from the reproductive work with the participation of the teacher to the self-managed Search and creative activity showing a high level of independence. As the results of the survey initially show the majority of students prefer to work with familiar tasks, and only with the acquisition of experience is the necessary confidence and trainees choose the creative work in which they can show your skills.

The results of the research show the value of practical-oriented technologies, which consists of a transition from the assessment of knowledge by the teacher to the joint evaluation of their work by students. Students are less dependent on the teacher, forming their own opinion, developing the skill of independence. The conducted research speaks about increase in efficiency of training at the expense of practical-oriented content of the studied material.

Each of the polls allowed forming an idea about the interests of students, their possibilities and desires, and in accordance with this, to choose the necessary elements of training, which are able to develop independence and creative component. The first survey showed the need to work with audio and video materials, as visualization contributes to better absorption of the material and increases motivation for self-cognitive activity. It was found that the fundamental factor in improving the quality of independent work students identified interest. This is a peculiar driving force for all students’ training. It is also allocated that a sufficiently large percentage of students pay attention to independent work.

After research and use of practical-oriented methods, students were able to see problems and solve them creatively in real-life conditions, to be independent, mobile and responsible specialists, in the labor market.

ACKNOWLEDGMENT

The author confirms that the data do not contain any conflict of interest.

REFERENCES

1. Abramova N.S., Gladkova M.N., Vaganova O.I. (2017). Features of the development of evaluation materials in the context of the implementation of the competence approach // Problems of Modern Pedagogical Education. 2017. No. 57-1. Pp. 3-9.
2. Ajeenkya D., Patil Y., Dr. (2014). Gagandeep Nagra and Dr. Gopal R. A Study on Total Quality Management in Higher Education // International Journal of Management. 2014. №. 5(5). P. 1-6.
3. Arkhipova, M.V., Belova, E.E., Gavrikova, Y.A., Lyulyaeva, N.A., Shapiro, E.D. (2018). Blended learning in teaching EFL to different age groups. Advances in Intelligent Systems and Computing, 622, pp. 380-386. https://doi.org/10.1007/978-3-319-75383-6_49
4. Barber, M., Donnelly, K., Rivzi, S., & Summers, L. (2013). An avalanche is coming. Higher Education and the revolution ahead,
http://www.studynet2.herts.ac.uk/intranet/lti.nsf/0/684431DD8106AF1680257B560052BCCC/$FILE/avalanche-is-coming_Mar2013_10432.pdf
5. Baykalova, E. D., Artyna, M. K., Dorzhu, N. S., Ochur, T. K., & Mongush, D. S. (2018). Morphological interference in the process of mastering Russian speech in conditions of interaction of Tuvan, Russian and English as a foreign language. Opción, 34(85-2), 35-60.
6. Bicheva I.B., (2017). Formation of the teacher-leader in the educational process of the university // Vestnik of Minin University. 2017. No. 3 (20). C. 5 (in Russian). https://doi.org/10.26795/2307-1281-2017-3-5
7. Braine, G. (2013). Non-native educators in English language teaching. Routledge. https://www.taylorfrancis.com/books/9781135461867. https://doi.org/10.4324/9781315045368
8. Bulaeva, M. (2017, July). Preparation of Bachelors of Professional Training Using MOODLE. In International conference on Humans as an Object of Study by Modern Science (pp. 406-411). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-319-75383-6_52
9. Italdinova E.Yu. (2017). Peculiarities of the organization of postgraduate support of graduates of the targeted training program in the context of supporting the life cycle of the teacher's profession // Vesniki of Minin University. 2017. No. 3 (20). C. 2. https://doi.org/10.26795/2307-1281-2017-3-2
10. Ilyashenko, L.K. (2018). The role of network interaction in the professional training of future engineers // International Journal of Mechanical Engineering and Technology (IJMET) Volume 9, Issue 4, April 2018, pp. 1097–1105
11. Iravani, M. R., Niknejadi, F., & Jahandoost, Z. (2015). The Relationship Between Age And Job Satisfaction Consultants Government Girls High School In Isfahan In 2012-2013 Academic Year. Health, 70(22.65), 24.
12. Khorrami, F. T., Fallah, M. H., & Abadi, H. Z. M. (2015). The Effect of Unconscious Influences of Satellite Channels on Attitude of Using Satellite. UCT Journal of Social Sciences and Humanities Research, 3(1), 61-67.
13. Kutepov, M.M. (2017). Possibilities of health-saving technologies in the formation of a healthy lifestyle. Baltic Humanitarian Journal, 6(3), 210-213. https://elibrary.ru/item.asp?id=30381912
14. Lubov K. (2018). Pedagogical Conditions of Formation of Communicative Competence of Future Engineers in the Process of Studying Humanitarian Disciplines, International Journal of Civil Engineering and Technology, 9(3), 2018, pp. 606–616.
15. Manikandan, A. (2018). Role of Engineering Education in Sustaining the Economic Development of India, International Journal of Mechanical Engineering and Technology 9(3), 2018, pp. 706–710.
16. Markova, S. M. (2017). Perspective Trends of Development of Professional Pedagogics as a Science. In International conference on Humans as an Object of Study by Modern Science (pp. 129-135). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-319-75383-6_17
17. Markova, S.M. (2018). Perspective trends of development of professional pedagogics as a science (2018) Advances in Intelligent Systems and Computing, 622, pp. 129-135. https://doi.org/10.1007/978-3-319-75383-6_17
18. Matandare, M. A. (2018). Botswana Unemployment Rate Trends by Gender: Relative Analysis with Upper Middle Income Southern African Countries (2000-2016). Dutch Journal of Finance and Management, 2(2), 04. https://doi.org/10.20897/djfm/3837
19. Rincon-Flores, E. G., Gallardo, K., & Fuente, J. M. D. L. (2018). Strengthening an Educational Innovation Strategy: Processes to Improve Gamification in Calculus Course through Performance Assessment and Meta-evaluation. International Electronic Journal of Mathematics Education, 13(1), 1-11. https://doi.org/10.12973/iejme/2692
20. Smirnova, Z. (2017). Itogovaya gosudarstvennaya attestatsiya kak sposob kompleksnoy otsenki kompetentnosti. Karelian Scientific Journal, 6(3), 74-77. https://elibrary.ru/item.asp?id=30453035
21. Torquato, M., Araujo, J., Umesh, I. M., & Maciel, P. (2018). SWARE: A Methodology for Software Aging and Rejuvenation Experiments. Journal of Information Systems Engineering & Management, 3(2), 15. https://doi.org/10.20897/jsisem.201815
22. Tsyplakova S.A. (2016). Theoretical bases of designing of educational systems // Azimuth of Scientific Research: Pedagogy and Psychology. 2016. Vol. 5. No. 1 (14). Pp. 131-133(in Russian).
23. Vaganova O.I. (2017). Development content of professional pedagogical education in the conditions of realization of competence approach. Baltic Humanitarian Journal, 2017, t. 6, no. 2 (19), pp. 97-99 (in Russian).
24. Vandergrift, L. (2007). Recent developments in second and foreign language listening comprehension research. Language teaching, 40(3), 191-210. https://www.cambridge.org/core/journals/language-teaching/article/recent-developments-in-second-and-foreign-language-listening-comprehension-research/59FCACBDE27E3B2CEFA26A8182489FFB. https://doi.org/10.1017/S0261444807004338