Asesorías y Tutorías para la Investigación Científica en la Educación Puig-Salabarría S.C.
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RFC: ATI120618V12

Revista Dilemas Contemporáneos: Educación, Política y Valores.
http://www.dilemascontemporaneoseducacionpoliticayvalores.com/
Año: VI Número: Edición Especial Artículo no.:103 Período: Junio, 2019.

TÍTULO: Seguimiento de las actividades de investigación de maestros en formación: un estudio de experiencias de estudiantes y profesores.

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RESUMEN: El objetivo del estudio fue identificar los mecanismos para activar la participación de los estudiantes en la investigación, así como los factores que contribuyen a garantizar su interés constante en las actividades académicas. El estudio de investigación siguió tres pasos de recolección de datos. Los hallazgos demuestran la necesidad de la implementación de la tutoría académica a partir del primer año en la universidad y de la participación de los estudiantes de último año, que ya han alcanzado el éxito académico, como tutores para los futuros estudiantes de primer año.

PALABRAS CLAVES: actividades de investigación para estudiantes, tutor, apoyo de tutor, estudiante, consejeros académicos.

TITLE: Tracking research activities of teachers in training: a study of the experiences of students and teachers.

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ABSTRACT: The study aimed to identify mechanisms for activating student engagement into research as well as factors contributing to ensuring their sustained interest into academic activities. The research study followed three steps of data collection. The findings demonstrate the need for the implementation of academic tutorship starting from the first year in university and for the involvement of senior students, who have already achieved academic success, as tutors for prospective and first-year students.

KEY WORDS: student research activities, tutor, tutor support, student, academic counsellors.

INTRODUCTION.

In today's world, student research activity is one of the major duties and responsibilities of any higher education institution. This important element in training future professionals develops the students' professional and personal qualities, as well as their creativity through independent search and knowledge enhancement.

The Federal State Standards for Higher Vocational Education in the related discipline (Pedagogical Education) show the ability to organize and carry out research activity as a compulsory professional skill. The Russian Federal State Education Standards note that "…the graduate with a bachelor's

degree should be able to accomplish the following professional tasks in accordance with the type or types of professional activity provided for in the Bachelor's Program: (…)

Research activity:

● To set and accomplish research tasks in science and education.

● To adopt scholarly research methods in professional activities.

Cultural and educational activity:

● To investigate and generate demand in cultural and educational activities among children and adults.

● To organize a cultural space.

● To develop and implement cultural and educational programs for various social groups" (Order of the Ministry of Education and Science of the Russian Federation of 9 February 2016).

The present research aimed to investigate the students' interest and involvement in research from the very first days of their university studies.

Modern higher education perceives research activities as an essential component of competitive professional training (Kalinina, 2012).

The current learning environment in terms of research activity, however, is based on the traditional system with the teacher giving classes to small groups (Theobald, Karen et al., 2017).

In this study, the term "research activity" refers, on one hand, to interaction between students and teachers aimed at developing the students' knowledge and skills obtained in the educational process (Rostova, 2011; Araya-Guzmán et al, 2018). On the other hand, this term refers to the professional development of prospective teachers, including their academic and pedagogical research skills, independence, initiative, team skills and professional task management (Bishtova, 2008; Tastan et al., 2018).

As a rule, Russian higher education institutions focus on two major areas of research:

1. Research activities that are part of the educational process and of the curriculum. These include laboratory work, papers, presentations, work on and participation in academic competitions, completion of tasks during educational internships and on-the-job training, term papers and graduation work with elements of some academic research, scholarly reviews and seminar and project presentations.

2. Extra-curricular research activities beyond the curriculum. These refer to the students' independent participation in academic conferences, seminars, student competitions, contests, fellowship applications, publications based on individual or team academic projects, certificates and patents of authorship.

Practice shows that, nowadays, both of these areas overlap and merge. Modern education is based on partial search and research activity replacing reproductive activity, thus increasing the share of academic research in the planned educational process. In its turn, research activity fulfils the practical requirements, while functioning as professional training (Yarkova, 2013; Kolesnikova and Shilina, 2015; Semin & Kurdymov, 2018).

One of the traditional modes of organizing student research activity is its incorporation in the SRS. Such societies provide students every opportunity to develop their research creativity and to get involved into the academic and educational world. Some of the tasks facing student research societies are as follows: to shape and develop student motivation to engage into research activities, to provide students with a well-organized research environment, to broaden their research skills and to determine how to include their research findings into socio-cultural practices (Haghshenas et al, 2015; Zulkifli & binti Ali, 2017; Yazdekhasti et al, 2015; Bicer et al., 2018).

The student's involvement in a SRS certainly contributes to his professional development through acquisition of key competence, professional and personal self-improvement and proactive approach to life (Pilipchevskaya and Kleyankina, 2012).

Here the questions arise. How can the student join a SRS? Who is to inform him or her about the existence of such an organization, and in what terms? Besides, how successful is the process of getting students involved in research?

DEVELOPMENT.

Methodology.

Materials used for the study were the following:

1. An anonymous survey among first- to five-year students enrolled in the Pedagogical Education program No. 44.03.05 (two specializations). The survey, based on a questionnaire developed by T. G. Ilyina (Ilyina, 2004), involved 104 students, that is, 7% of the total number of students in the program.

2. An account of the activities of the SRS for 2017. The data obtained provided the basis for ranking different years of study taking into consideration the students' involvement into the SRS.

Results and discussion.

The study revealed that students do not always make clear distinctions between the notions of educational activities and research activities, which stresses once again the increasing convergence between these two processes. Among other things, students classify grant applications (20%) and academic article writing (24%) as educational activities (see Figure 1).

Figure 1. Students' understanding of research activities (n=104).

Questions:	**%**
Laboratory work	45,19
Reports	47,11
Educational internships and on-the-job training	47,11
Study of the research methodology	49,04
Work on individual assignments	57,73
Term and diploma papers	68,27
Seminar presentations	68,27
Article writing for publication	75,96
Student competitions by discipline	77,88
Grant proposals	79,81

Most survey questions focused on the students' motivation in getting themselves engaged into research activities.

The criteria for evaluating the students' motivation in participating in research activities were as follows:

- Exemption from examinations or tests.
- Material incentives.
- Use of newly acquired knowledge and skills in professional life.
- Interest in the learning process itself.
- Opportunity to communicate with like-minded people and to travel to conferences and contests.
- Individual desire of the student.
- Successful academic activities of senior students and graduates.
- Positive approach of an instructor to joint work.
- Availability of facilities and resources in the higher education institution.

The results of the survey were analyzed by year of study with a view to evaluate growth or recession rates in terms of the students' interest for research activities (Fig. 2).

Figure 2. Students' interest in research activities (n=104).

Questions	**% by year of study**				
	1	**2**	**3**	**4**	**5**
YES	8.65	34.61	25.96	41.35	19.23
NO	52.88	21.15	52.88	54.81	48.08
I am interested, but I have no time	43.27	34.61	17.31	15.38	9.61

A comparative analysis of the data obtained shows that first-year students take a considerable interest in research activities, while it begins to wane towards the end of the study program (fifth year of study). Consequently, students need to be involved into research activities as early as their first year of study at a higher education institution. First-year students should get help from their school when selecting areas of research available in their respective faculties, departments, student research societies and so on (Danilchenko, 2015).

The research undertaken by E. Chelnokova reveals that only 45% of first-year students direct their activities towards receiving a good education in order to become a highly-qualified specialist in the chosen area of study (Chelnokova and Nabiyev, 2015), while other seem to be "searching for their identity" and, as a result, hop from one activity to another. This is why higher education institutions should familiarize first-year students with research methodologies, create situations of real success when introducing the research outcomes into real practice and encourage students' research creativity and independence when dealing with scientific and creative objectives (Krysova, 2014).

Various forms of creative and scientific activity will help first-year students to trace their individual educational path and to acquire related professional skills. At the same time, institutions should take into consideration the flip side of this process.

Some professors and staff members expose first-year students to too much information in an effort to adapt them to their new academic environment and to show them how much the higher education institution has to offer. Being ill prepared to analytically perceive and interpret information, first-year students are often unable to critically respond to information flows (Gospodarik, 2013), so they tend to 'spread themselves too thin' and, as a result, they fall behind in school and, eventually, become disillusioned with research activities, among others.

To prevent a decline in interest in research activities, there is a need for a specialist who could provide assistance with research assignments, help students to overcome challenges and to take their first steps in research, give them explanations and act as a guide, an intermediator and an organizer of research activities in the higher education institution. One option would be tutorship (Yekimova, 2014).

Tutorship has been known since the 14th century, when freedom in teaching and learning created a need for an intermediary between the free professor and the free student. As the university system developed, the tutor's range of activities expanded. The tutor acted as the student's closest assistant and counsellor in everything related to studies. He guided the student, had responsibility for his acquisition of knowledge and his preparedness for exams and actively participated in his lifestyle. Consequently, the tutor's role was to ensure interrelatedness of self-learning, upbringing and lifestyle development (Klishina, 2016).

Only recently has the use of the notion 'tutor' in modern Russian education has become widespread. This notion, however, was well known in Russia as early as the 19th century.

The Tsesarevich Nicolas Lyceum, established by M. Katkov in Moscow in 1868, included the position of tutor, whose primary responsibility was to ensure the individual upbringing of schoolchildren in his care (Chelnokova, 2015). Some 140 years later, tutorship took again its place among other teaching job positions in general, higher and vocational education.

The present-day tutor is a teacher charged with developing and maintaining individual educational programs (Sergeyeva et al, 2016).

The tutor is responsible for organizing individual work with learners, defining, generating and stimulating their cognitive interests that go hand in hand with their personal development. In other words, the tutor helps students to make sense of their successes and failures, to build up their personal expectations of higher education and to set goals for the future. Furthermore, the tutor coordinates the students' search for information for self-learning purposes.

The tutor will be responsible for the implementation of individual educational plans, the learners' self-determination and their holistic development.

The tutor is a specific type of teacher who acts as a counsellor and a mentor organizing the learners' individual activities aimed at successfully covering all areas of the curriculum and at promoting their personal and professional development.

What is special about the tutor is that he neither transfers knowledge to students nor organizes their learning process. The tutor's role is to help students to determine their personal needs for the necessary knowledge and skills, to choose a specific profession and future job internships as well as to realize their personal educational goals within modules and the general curriculum (Pilipchevskaya and Kleyankina, 2012).

Assisted by a tutor, the student establishes his or her individual educational and research plans. The results of the survey confirm the need for implementing tutorship into the educational process (Fig. 3).

Figure 3. Students' opinions on the determining factor related to their involvement into research activities (n=104).

Questions	**% by year of study**				
	1	**2**	**3**	**4**	**5**
Personal preferences	91.34	87.5	70.19	65.38	70.19
Successful research of other students	25.96	13.46	0	35.58	19.23
Counsellor, mentor	43.27	30.77	25.96	35.58	16.35
Technical facilities	22.11	13.46	25.96	25.0	13.46

According to the respondents, the determining factor related to students' involvement into research activities is not only their personal preferences, but also the mentor's personality. This is not surprising, as the quality of education of prospective teachers depends crucially on their professors' qualifications, their extensive knowledge and their ability to present new information in an interesting and user-friendly manner and to evaluate students' performance while taking into consideration their individual differences and abilities. Another major aspect of quality training is the need for combining students' uninterrupted practical work in school with theoretical training.

An analysis of the account of the student research society's activities showed that four-year students, particularly those majoring in ecology and chemistry, are among the best performing in terms of research activity (Table 1). Interviews with the learners revealed that such outstanding results were due to the intense activity of the group's monitor. Most of the students have this person as their academic advisor, while for others he acts as an intermediator when interacting with other professors at the department. Specifically, he refers the student to this or that professor (or vice versa) based on his assessment of the student's abilities, personality, research capability and interests. In short, he acts as a tutor.

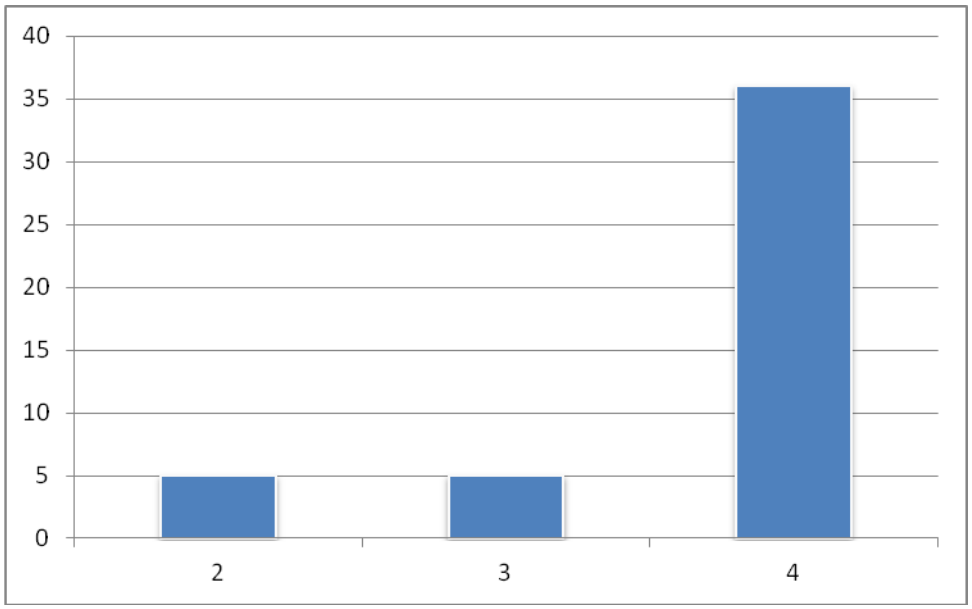

Table 1. Students' involvement in research activities (vertically, number of research papers; horizontally, years of study).

CONCLUSIONS.

The conducted research study students' research activities require constant monitoring. In this regard, the decision was made to strengthen efforts to enhance first-year students' research activities by means of tutorship. The so-called 'academic counsellors' selected from among senior undergraduate students were engaged to put this idea into action (Yerofeyeva et al, 2015). Their job was to involve first-year students in working on team-based research projects together with four-year students.

As a result, the total number of team-based projects, each numbering two or three persons, was 11. The P. P. Yershov Science Education Development Center (Levykh et al, 2016) invited four high school students to join the projects as this university's prospective students. Incidentally, the above-mentioned Center serves as a supporting platform for the networking of the university with academic teaching, practice-oriented learning and teacher retraining facilities.

Given the limited amount of teaching time (Kungurov, 2017) or even the absence of disciplines corresponding to student research projects, the present study adopted the so-called 'Online Tutoring for After-School Learning' (Lih-Juan Chan Lin et al., 2015).

To provide meaningful student/teacher feedback communication, students created their personal accounts on the official website of the Tyumen State University at https://vmeste.utmn.ru and social groups in Vkontakte, the biggest Russian social media, which enables all the participants in the project to quickly communicate with each other, to share and summarize the results obtained, and so on.

Work had proceeded productively, and the results were apparent in the positive trend of the students involved in this system within a relatively short period of time (12 months). Other achievements include two prizes received at a prestigious regional student research competition, eleven scholarly articles ready for publication, four projects proposed by first-year students on an individual basis and four high school projects directed by tutor students who participate in the research work competition. Most first-year students expressed interest in this activity due to positive experiences and successful completion of research projects by their peer students and their tutors. Based on the above, it is possible to assert that academic tutorship introduced as early as the first year of university acts as an incentive for students to engage themselves into research activities and provides them the opportunity to integrate more rapidly into their university's academic community.

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RECIBIDO: 1 de mayo del 2019. **APROBADO:** 10 de mayo del 2019.