

ICEST 2021**II International Conference on Economic and Social Trends for Sustainability of Modern Society****FIELD TRAINING OF STUDENT CONSTRUCTION UNITS**

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Abstract

The experience of the USSR and modern Russia indicates that the movement of student construction units (SCU) is an effective tool for teaching and educating young people. At the same time, the integrity of the system of training of SCU participants can be achieved by harmonizing their professional and personal development programs. One of the ways to achieve this goal may be to implement field training of students, including educational, professional, sports, cultural and creative activities. To ensure the possibility of transferring organizational and managerial experience, the authors of the study provide three possible scenarios for conducting field training of SCU participants. Each of them was developed and implemented as part of the activities of the SCU headquarters of the Moscow State University of Civil Engineering (National Research University) (MSUCE) in 2011-2019. The set and nature of key events, as well as their temporary linkage, determine the specifics of field training. Depending on the goals and objectives, it is possible to implement training in the scenarios: "Professional-labor," "Educational" or "Balanced." The consolidated and presented in the work experience of conducting field training of the SCU of the Moscow State University of Civil Engineering can be used by other educational organizations, SCU headquarters or construction organizations in the development of exit events focused on team cohesion, building productive interaction of employees, as well as on the formation of an atmosphere of healthy competition and cooperation in the working team.

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1. Introduction

Student construction units (SCU) are a form of temporary employment of youth, which was widely developed in the middle of the 20th century in the USSR. Having originated in the construction industry, participants in the SCU movement quickly found application competencies in agriculture, medicine, the organization of passenger transportation by rail, and became a significant resource for the work of children's camps during the summer holidays. Thus, in the first decades, the SCU movement significantly increased and expanded the range of activities. In this regard, in society it became known simply as the movement of student units (SU), uniting various areas of work of students.

Currently, the SU movement is an active participant in professional activities and public life in Belarus, Kazakhstan and Russia. To organize activities and stimulate the development of the SU movement in the Russian Federation, the Russian Student Units (RSU) Youth All-Russian Public Organization was established in 2004 (Ankudinova, 2020). According to official estimates, in 2016-2020, the average annual number of its members was 240,000 people from 74 constituent entities of the Russian Federation (Sajganova & Samykina, 2020). The construction area during this period accounted for about 25% or at least 60,000 people.

The large number of participants determines the high relevance of addressing corporate issues. It has already been noted that the relative ideological and practical disunity of the SCU movement remains. In most cases, this is due to the historical and geographical specificity of the activities of the SCU headquarters, as well as the high disproportionate development of the movement in the 90s of the XX century.

According to the authors of the research, the territorial, historical and ideological contradictions of the regional, university headquarters of the SCU are most often expressed in the form of differences in the accepted hierarchy of goals, the implemented organizational structure of the movement, the forms and mechanisms of its transformation. The level of funding and administrative and managerial resources at the disposal of the SCU headquarters have a significant impact on these contradictions.

2. Problem Statement

It should be noted that the stagnation of the national SU movement in the 90s of the XX century was accompanied by the partial preservation and appropriate preservation of the activities of regional and university SU headquarters in the territories of certain constituent subject of the Russian Federation. Having the necessary representation of interests in the legislative and executive authorities, the SCU movement in the Sverdlovsk region, Chelyabinsk, Tomsk region, in the Altai Territory and a number of other constituent subject of the Russian Federation continued to carry out activities even in the unfavorable economic situation in the country. This aspect on the one hand allowed to preserve the traditions and continuity of the movement in the territory of these subjects, and on the other hand predetermined the growing gap in the level of development of the movement relative to the subject in which SU activities were nullified.

The most striking example of the colossal decline in the number of the SU movement and the scale of its activities was the city of Moscow. The economic realities of the last decade of the XX have had a negative impact on the ideological, organizational aspects of the movement. The renaissance of the SU of

the early 2000s created favorable conditions for the development of the SU movement in leading metropolitan universities, however, 16 years after the creation of the RSU, the number of participants in the construction detachment movement in the capital is significantly lower than the same value of the late 1980s.

This circumstance clearly demonstrates the transformation of the socio-political, professional life of society. The increase in the degree of mechanization of production and construction, in particular, the slowdown in economic development has led to a significant release of labor resources. The active involvement of labor migrants in the construction and installation work (CIW) led to an even greater decrease in the interest of construction enterprises and the organization in attracting SCU participants.

Thus, it should be noted that by the beginning of the third decade of the 2000s, the construction industry does not need to attract a large number of low-skilled labor (Soboleva & Alekseeva, 2018), while the need for professional-mobile and highly skilled personnel is systematically increasing. The RSU results demonstrate that the current state of SCU movement does not meet the current needs of the construction industry.

3. Research Questions

In view of lack of open all-Russian data on qualification of students of the higher education institutions attracted to design and exploration works (DEW) and CIW in the SCU format it is impossible to estimate professional standard of participants qualitatively.

The authors of the study in 2010-2019 were participants, coordinators and leaders of the Headquarters of Student Construction Units of the Moscow State University of Civil Engineering (National Research University)" (MSUCE). In 2011-2019, the SCU of the MSUCE took part in the implementation of twenty six large scale investment and construction projects (nuclear power plants, hydroelectric power stations, combined heat and power plants, Cosmodrome «Plesetsk» and «Vostochny») (Voronkov, 2018). Most of these projects were sites for all-Russian, zonal and regional student projects of the RSU. The sufficient involvement of the SCU of the MSUCE in the activities of the All-Russian movement of student construction units allows us to assess in the first approach the All-Russian level of professional competencies of SCU participants. The results of the evaluation revealed:

- more than 75% of all participants in the SCU movement in 2011-2019 did not have professional qualifications for activities performed in the third labor semester.
- more than 50% of participants were trainees of non-core construction of educational organizations.

These values are determined by the authors of the research on the basis of familiarization with the process of organizing the activities of labour projects of the RSU, information about participants in the largest implemented investment and construction projects (ISP) published in the media and social networks. Currently, there is no open all-Russian data on participants in the SCU movement, so the indicators presented cannot be fully verified and are exclusively the results of the expert assessment performed by the authors of the research.

The obtained results of the assessment of the professional qualification level of SCU participants involved in 2011-2019 in work on the largest labour projects of the RSU clearly demonstrate the fundamental discrepancy between the level of qualitative development of the SCU movement and the current needs of the construction industry. This discrepancy becomes one of the key obstacles to the development of the construction units' movement both in individual educational organizations and in the whole country and requires events to reduce the existing gap.

4. Purpose of the Study

Emphasizing the importance of professional competencies to increase the general level of the SCU movement, it should be noted that the formation of these competencies is a complex, expensive, long time process and cannot be fully entrusted to the organizers of the SCU movement both in the university and in the region or country. According to the authors of the research, this problem should be solved mainly by basic educational organizations. While the headquarters of the SCU of the university and the subject of the Russian Federation should perform a corrective and fixing function.

In turn, along with professional skills and competencies (hard skills) (Ivanov et al., 2020), the possession of above-professional skills (soft skills) (Zolnikov & Niazbakiev, 2019). becomes more and more obvious as a significant competitive advantage of young specialists. This category of skills cannot be formed exclusively within the framework of the formal educational activities of universities. In this matter, the social, cultural and creative, sports spheres of life of studying universities take on strategic importance. According to the authors of the research, the activities of the SCU headquarters should be largely directed at the formation of soft skills. In case of having the necessary financing and administrative support, the headquarters of the SCU of an educational organization or a subject of the Russian Federation can and should, together with the development of "soft skills," implement training programs for students, improving their "hard skills."

The implementation of comprehensive training (soft skills and hard skills) of students is currently inaccessible to most headquarters of SCU universities, but is a key condition for the development of the SCU movement and its introduction to the existing and promising requirements of the construction industry. In the previously published works, the authors of the research disclose the issues of forming a system for training professionally competent personnel on the example of the headquarters of student construction units of the Moscow State University of Civil Engineering (2011-2019) (Voronkov et al., 2020), as well as consider organizational and technological features of professional training of participants of student construction units (Gamov et al., 2020). At the same time, in the data of the study, insufficient attention is paid to the development of the above-professional skills of students.

Familiarity with modern scientific literature demonstrates the insufficient methodological basis for organizing the activities of the SCU, aimed at forming "soft skills" among students (Temnikov & Tret'yakov, 2018). Existing scientific publications on the subject of student construction units are devoted mainly to the history of their birth (Streletskiy, 2019) and development (Golovonenko & Kudashkin, 2010) during the USSR. Thus this work sets as the purpose in addition to the previous works to consider separate elements of the research of the mechanism of formation and improvement of soft skills of participants of SCU developed and realized in 2013-2019 by authors.

5. Research Methods

In 2011-2014, the authors of the research developed, and from 2015 to 2019, the system of training participants SCU of the MSUCE was improved. By 2019, it consisted of three goals, objectives, resources and cycle times:

- training cycle focused on acquisition and consolidation of professional skills (hard skills);
- cycle of events focused on the development of personal qualities (soft skills) among SCU participants;
- cycle of adaptation and socialization of SCU participants (soft skills).

This system was developed on the basis of the experience gained in preparing students for vocational work. It provided for the necessary "rest" intervals allocated for the full concentration of students at the delivery of certification sessions (June and January) and the restoration of strength after the completion of the SCU labor semester. The modern experience of organizing the activities of student pedagogical units has proved invaluable in the preparation of the action plan (Bogdanova, 2019).

5.1. Ideological concept of the headquarters SCU of the MSUCE

Traditionally, the most difficult in the process of development of the construction units movement is the development and implementation of a professional event. However, in the case of MSUCE, the issues of organizations of events aimed at the formation of personal qualities among participants were no less acute (Ermolaeva et al., 2020). At the same time, this task was to be solved in a strict connection with the professional training of participants and correspond to the general ideological concept of the headquarters SCU of the MSUCE.

The basis of this concept was the orientation to the staff organizational structure (OS) of the university movement of the SCU. This concept involved the organization and implementation of large unit-wide events with a highest on the quality, coverage and result of the level.

The "closure" of individual preparatory, intermediate and final events of two cycles of soft skills development of SCU participants was impossible without conducting field training.

To ensure the consolidation of skills, the construction of strong communication channels between the participants of various units, it was necessary to organize a comprehensive intensive event. This event was supposed to ensure the "complete immersion" of SCU participants in the process of professional and personal training.

5.2. Field training SCU of the MSUCE

Since 2013, such an event has been the Spring Field School of the command staff SCU of the MSUCE.

Since 2017, the school began to be held twice a year - in spring and autumn. This event was implemented in the format of a three-day field training. As a venue, the recreation center of the Moscow State University of Civil Engineering "Bronnitsy" located in a sparsely populated area of the Moscow

Region, was used. The infrastructure of the recreation center provided the implementation of cultural and creative, sports, educational events, and also allowed temporary residence for up to 140 students.

It should be noted that in the process of developing the SU movement, most regions and higher educational institutions came to the realization of the need and importance of organizing field training as part of the implementation of the SU participants training program.

At the same time, the financial and organizational and managerial resources of most SU headquarters of educational organizations did not allow the implementation of field training.

At the same time, within the framework of the RSU, it is currently possible to systematically support the implementation of district SU schools, which in practice implement the tasks of not preparation, but socialization, coordination of participants in the SU movement of several constituent subjects of the Russian Federation.

In other words, the issues of professional and above-professional development of SCU participants of educational organizations are completely under the control of the SCU headquarters of educational organizations.

In turn, the RSU partially provides the solution of the tasks of the inter-university interaction of the participants in the Moscow SO movement. In the current conditions, solving the problems of effective, rational conduct of field training of students by the SCU headquarters of educational organizations acquire high complexity and relevance. At the same time, the consolidation of existing experience and the transfer of technologies for organizing and conducting field training of SCU participants can become a driver for the development of the construction units movement.

6. Findings

6.1. Field Study Program Scenarios

Based on the experience gained by the authors of the research, three developed scenarios of the exit training program (school) (Narykova, 2020) of the participants in the SU movement are proposed.

The scenarios presented take into account the linkage of the resources of the organizing headquarters, the greatest productivity of the event at the appointed time, as well as the sequence of construction of the entire program.

Each of the three scenarios was implemented by the headquarters of the SCU MSUCE at one stage or another of its development.

Scenarios of the field training program for SCU MSUCE participants are presented in Figure 1.

Time	Action		
	Scenario 1. Balanced	Scenario 2. Educational	Scenario 3. Vocational and labor
Day 1			
15:10-19:00	Transfer. Resettlement		
19:00-19:45	Dinner		
20:00-20:30	Solemn opening		
20:30-22:00	Quest		
22:00-23:30	Prepare presentation teams	Lecture 1	First stage of professional skill competition
23:30-00:30	Team Presentation	Project development	
00:30-01:00	Discussion of the results of the day		
01:00	Night time		
Day 2			
07:30-08:00	Getting up		
08:00-08:30	Morning exercises		
09:00-09:30	Breakfast		
10:00-11:30	Dating Event (Speed dating)	Project alignment/ adjustment	Second stage of professional skill competition
11:30-13:00	Study of cases	Project presentation	
13:00-14:00	Lunch		
14:00-14:50	Lecture 1	Dating Event (Speed dating)	
15:00-15:50	Lecture 2	Lecture 2	Lecture 1
16:00-18:00	Theme game		Third stage of professional skill competition
18:00-19:00	Dinner		
19:00-20:00	Guitar event	Study of cases	
20:00-21:00	Discussion of the results of the day	Guitar event	
21:00-22:00	Public event	Discussion of the results of the day	
22:00-00:30	Disco		
01:30-02:00	Night time		
Day 3			
09:00-09:30	Getting up		
09:30-10:00	Morning exercises		
10:00-11:00	Breakfast		
11:00-11:40	Sporting event	Intelligent Event	Summing up the professional skills competition
11:40-12:00	Preparation for departure		
12:00-13:00	Solemn closing		
13:00-14:00	Lunch		
14:00-15:00	Departure		

Figure 1. Scenarios of field training of SCU MSUCE

In accordance with the presented scenarios, in 2013-2019, 8 field training of participants of the SCU MSUCE was implemented. In 2013, 2015, 2016 and 2019, only the Spring Field School was held, in 2017 and 2018 - Spring and Autumn. In 2014, this event was not implemented. The number of private participants in field training ranged from 48 people in 2013 to 90 people in 2018. In total, more than 450 people took part in the field training of participants SCU of the Moscow State University of Civil Engineering, including 8 invited representatives of another educational organization - Chuvash State University named after I.N. Ulyanov (CSU named after I.N. Ulyanova). Since 2015, the SCU CSU named after I.N. Ulyanov "Energy 21" and the Consolidated SCU MSUCE are sworn (fraternization) units.

6.2. Participation of representatives of leading organizations of the construction industry in field training

Since 2015, lectures, trainings and master classes conducted by representatives of the construction complex, some of whom came from the SCU, have become an important component of the field training of SCU participants. Field schools were systematically attended by representatives of nuclear, heat and energy, infrastructure construction. Sergei Valerievich Rumyantsev, Director of the branch of JSC "Fuel and Energy Complex Mosenergo" - "Department for the Construction of the Sakhalin GRES-2," became the guest of honor of the Autumn Field School SCU of the Moscow State University of Civil Engineering 2018.

The involvement of heads of leading organizations of the construction industry in the implementation of educational events of the field school, as well as the creation of conditions for informal communication of the main participants in field training, had both a positive impact on the formation of professional and above-professional competencies among students of the Moscow State University of Civil Engineering and made it possible to narrow the existing gap between SCU participants and the leadership of leading construction companies interested in increasing the personnel potential of organizations.

6.3. Development of a weekly field training program

In addition to the above, it should be noted that in 2016-2018, the headquarters of the SCU MSUCE developed a program for conducting a week-long field training of SCU participants. This training was supposed to include both full-fledged professional training of SCU participants in working construction specialties (fitter, formwork system installer, bricklayer, plaster) (Erofeeva & Molodykh, 2019), holding a competition of professional skill, as well as conducting events socialization, adaptation, development of personal qualities of students. However, this program required significant funding for the creation of the necessary production infrastructure, sending on a business trip of leading teachers, and also led to the need to adjust the training schedules of training groups whose students were SCU participants. Due to the above difficulties, this program was not implemented, however, according to the authors of the research, this format of professional and personal training has the greatest potential and can qualitatively increase the level of training of participants of student construction units.

7. Conclusion

The implementation of events aimed at the development of both professional and above-professional skills of students is one of the priority tasks of the headquarters of student units. At present, not every headquarters of the SU university can afford to hold field events. However, in cases where there are objective prerequisites for the implementation of field training, its implementation takes on strategic importance.

7.1. Results of participants training SCU of the MSUCE

Thanks to the conduct of field training, the headquarters of the SCU of the Moscow State University of Civil Engineering managed to link the set of preparatory and final events of the university movement of the SCU, ensure the communication of participants of various linear student construction units of the MSUCE, improve the quality of professional and personal training of students.

The result of the professional and personal training of the participants of the construction units movement implemented in 2013-2018 by the headquarters of the SCU MSUCE was:

1. Three-time recognition of the headquarters of the SCU MSUCE as the best headquarters of student units of the educational organization of the city of Moscow (2014, 2017, 2018);
2. Victories in the II and III All-Russian competitions of professional skill among student groups #TrudKrut (2016, 2017);
3. Recognition of the SCU MSUCE «Atlanty» and SCU MSUCE «Vityaz» as the best student construction units of the city of Moscow in 2017 and 2018, respectively.

7.2. Reference experience for educational organizations

The scenarios of this event, formed on the basis of the experience of conducting field training of participants of the SCU MSUCE, can be used by educational organizations in the process of development of the construction units movement, and may be borrowed and modernized by any individuals and entities for the purpose of conducting field events, a collective-oriented organization, building strong relationships between employees of the enterprise, as well as the formation of an atmosphere of healthy competition and cooperation in the working team.

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