

EDUCATION THROUGH EXTRACURRICULAR ACTIVITIES RELATED TO PETROLEUM ENGINEERING AND GEOPHYSICS

M.Sc. Milica Vukić¹

M.Sc. Mila Đuričić²

Associate Prof. Dr. Snežana Komatina²

Associate Prof. Dr. Aleksandra Kolarski²

Đurica Surla²

Isidora Popov²

¹ AGES, Belgrade 11000, **Serbia**

^{1,2} Technical Faculty "Mihajlo Pupin", University of Novi Sad, Zrenjanin 23000, **Serbia**

ABSTRACT

In this study, the results of a survey of extracurricular activities provided to students and young professionals who participated in the 1st International Workshop "Pupin meets Nobel", organized by Association of Geophysicists and Environmentalists of Serbia (AGES) in May 2019, as continuation of the activities of the AGES Student Section under the auspices of the Geoscientists Without Borders Project, are presented. The activities performed by AGES after accomplishing the project in 2017 are directed to students and young professionals dealing with geosciences, geophysics and petroleum engineering. Goal of our Faculty Advisors' team is to spread the word on significance of extracurricular activities with students of all levels, in order to support R&D among young professionals, particularly within humanitarian expert projects.

Keywords: Education, Extracurricular activities, Petroleum engineering, Geophysics.

INTRODUCTION

Important factors in the successful career of the young professionals in science and technology are the management of future careers through constant learning, training, research work, proper strategy and planning as well as building the own network of professional contacts. In this study, results of an anonymous survey related to the Conference and the Workshops organized in May 2019 by Association of Geophysicists and Environmentalists of Serbia (AGES) and financially supported by the European Association of Geoscientists and Engineers (EAGE) PACE Foundation and Central European Initiatives (CEI) and attended by 56 participants from countries of the Balkan region and the whole world, are presented. At each event organized by AGES, a questionnaire received from CEI is filled out and analyzed in detail. Goal of the anonymous survey was to get the feedback from participants (young professionals and students) about the 1st International Workshop "Pupin meets Nobel", in order to review benefits of AGES extracurricular activities related to geophysics, geosciences and petroleum engineering as well as to plan future activities of the Student Section. Our vision is to build a better and safer future, to connect young professionals and experts

from all over the world through the acquisition of new professional knowledge and skills by working on humanitarian expert projects and life-long learning.

STUDY METHODOLOGY

AGES extracurricular activities related to geophysics, geosciences and petroleum engineering directed to young professionals and students started during the two-year Geoscientists without Borders (GwB) humanitarian project Assessment of flood damaged infrastructures in Bosnia and Herzegovina and Serbia in June 2015 (Komatina, 2015; Tuzović & Komatina, 2016). The project was based on a survey of landslides occurred in Bosnia and Herzegovina and Serbia after the floods in May 2014. It was directly supported by SEG (Society of Exploration Geophysicists), but with temporary support from EAGE PACE and CEI, the Ministry of Science, Education and Technological Development of the Republic of Serbia, the Serbia Convention Bureau and local partners of AGES.

Experts from Japan, Australia, Canada, Sweden, Italy, Russia, US, Bosnia and Herzegovina and Serbia, as well as 36 students from Japan, Montenegro, Bosnia and Herzegovina and Serbia collaborated directly on the GwB project (Komatina & Komatina, 2017). Through direct work in the field, students had the opportunity to apply the acquired theoretical knowledge and supplement it with concrete experience from the field as well as with expert advice given by the present experts. After the geophysical measurements of the fields, analyzes and recommendations of geotechnical engineers followed, all with the aim of how to adequately repair each of the landslides. The results were presented to local governments and their experts in order to continue cooperation in the future. In addition to solving the humanitarian catastrophe caused by the floods in May 2014, the project had multiple purposes such as cooperation of experts from all around the world with students and experts from the region, application of acquired theoretical knowledge in the field, professional networking and cooperation of participants of different multicultural, multinational and religious backgrounds, promoting gender equality, building a multinational team, supporting students from underdeveloped and poor parts of the Balkan region, as well as building a better and safer future for all (Komatina, Urošević, Suto 2019; Komatina & Bojat, 2016).

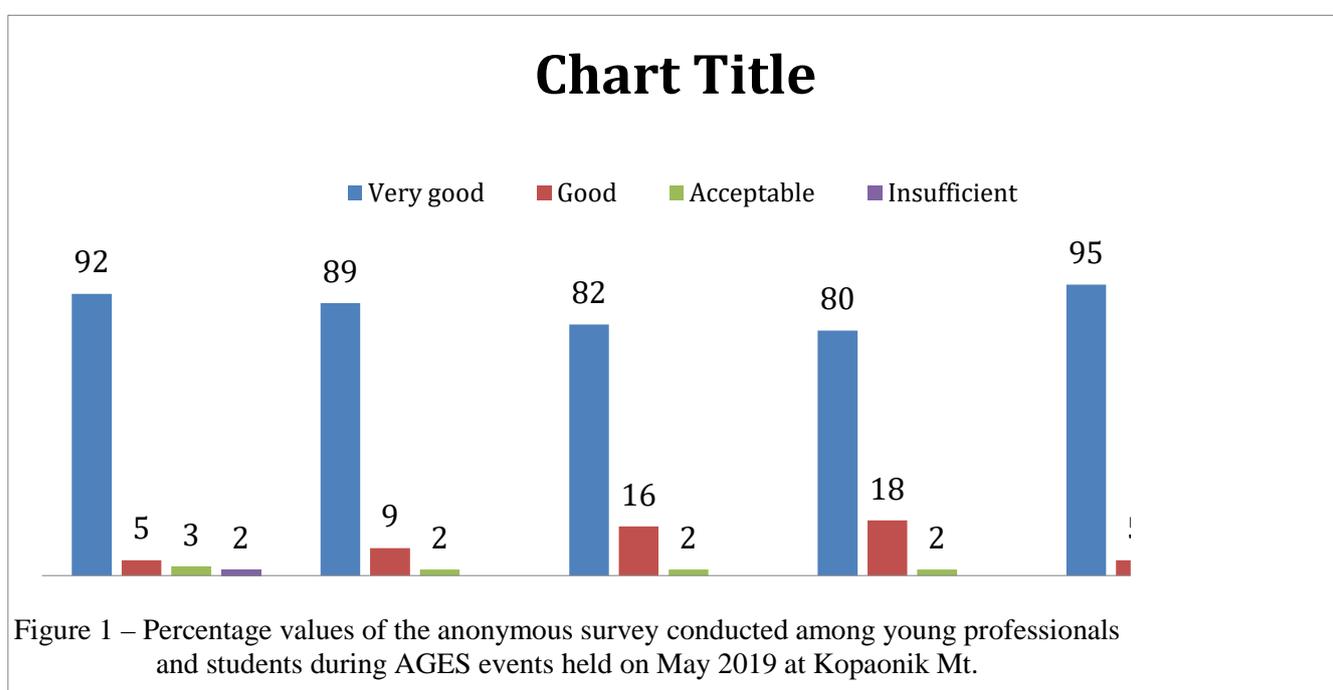
The project also included a series of lectures, workshops and international congresses and work with groups of students with special needs (Urošević et al, 2017). Education and networking activities were continued after the GwB project accomplishing, just directing the program to petroleum engineering and other technical fields (Suto et al., 2015, Vukić & Marković, 2017).

One of the recent programs is event organized by AGES in May 2019 on Kopaonik Mt. Serbia, which included: The 2nd AGES/EAGE/CEI Conference & Technical Exhibition: Geosciences applied to solve humanitarian problems worldwide, The 1st International Students' Workshop: Pupin meets Nobel and The 1st International Students' Coaching Workshop: Networking, outreach and presenting strategies (Vukić et al, 2019).

In this paper, the results and discussion of an anonymous survey conducted among 56 participants are presented. The focus of the study contains five of seven issues related to: overall organization, attached documentation, quality of participation and presentations, networking opportunities, planned monitoring and visibility of CEI.

RESULTS

This paper presents the first five mentioned survey questions. The remaining two questions do not directly belong to our topic. Because of that, they will not be discussed on this occasion. The answers offered were: very good, good, acceptable, insufficient and bad. Also, we want to emphasize that we have shown on the graph only the values that we found in the answers of the participants. In addition to the questions offered, anonymous respondents had the opportunity to write their comment in the additional field. The comments presented below are authentic. We believe that the comments are the best witnesses of what has been achieved in Serbia during one week. Five questions were presented graphically. As a confirmation of the first question, it can be clearly seen that 92% of anonymous respondents believe in the benefits of their cooperation with AGES (Figure 1).



Based on the answers received to the second question, it can be noticed that almost 90% of respondents are very satisfied with the submitted documentation (and study material). Participation in the congress activities was assessed by 82% of respondents as very good and 16% as good. The quality of the prepared oral presentations and lectures at the congress was rated with 82% as very good and 16% as good. The possibility of networking and creating new business contacts that are extremely important for future employment and connecting universities and industry was rated by our respondents as very good in as many as 95% of cases. The obtained high percentage of positive answers gives us an exceptional confirmation for our work and a direction in which we will move in the future.

DISCUSSION

Overall, the survey and statistical data processing showed interesting results. From the obtained data and comments of anonymously surveyed young professionals, it can be seen that they are extremely motivated to participate in humanitarian projects. Also, it can be an extremely great desire to participate in congresses and workshops, which gives respondents additional motivation to further improve and invest in new knowledge and skills. It is also interesting that their interest is supported by senior professionals and experts from academia and industry. This support is reflected in direct communication, giving useful advice and connecting in a team, which directly promotes teamwork and belonging to the scientific community. In the continuation of the discussion, some of the answers to the questions will be presented through anonymously given original comments of our respondents.

In the following part, some statistics and comments are presented in Table 1.

Table 1 – Study questions and received answers

Study question 1. How do you evaluate the entire organization of the conference?
Comment 1: <i>“Great meeting, great values!” (Australia)</i>
Comment 2: <i>“Everything was very nice and well organized. The conference was of very good quality.”(Italy)</i>
Comment 3: <i>“Perfectly organized conference, lectures and time for excursions and fun are perfectly combined. Students are encouraged to team up. We had a great opportunity to learn something new and meet new people. ” (Serbia)</i>
Study question 2. How do you evaluate the submitted documentation?
Comment 1: <i>“The documentation we received from the congress organizers is excellent. The material contained information about congress activities, maps of walking tours and important tourist locations we visited.” (Serbia)</i>
Study question 3. How do you evaluate the participation?
Comment 1: <i>“ Compared to the level of support from sponsors, the event was very successful. Student participation added a special color to the congress. It is my pleasure to participate and present an article on the Khazar natural region in eastern Turkey.”(Turkey)</i>
Comment 2: <i>“We were really pleased with the hospitality of the students and the organizers. The lecturers and their presentations were really amazing, it was such a great exchange of knowledge. We will definitely be back again. Everything was on an extremely professional level. ” (Croatia)</i>
Study question 4. How do you evaluate the quality of presentations?
Comment 1: <i>“I was really surprised by the quality of the presentations, especially from young professionals and students. The atmosphere was very positive which is extremely important for sharing knowledge and experiences. I really enjoyed and look forward to participating again. Thank you very much to the organizers and the wonderful team, see you soon!”(Croatia)</i>
Comment 2: <i>“Presentations could be a little more tailored to the level of prior knowledge of the audience.” (Serbia)</i>
Comment 3: <i>“The conference did not move as announced in the program. The attendees did their best and presented their papers in an interesting way.” (Australia)</i>
Comment 4: <i>“One of the most useful conferences I attended recently. The</i>

<i>organization was perfect, the presentations were great. Also, the hotel "Kraljevi čardaci" and Kopaonik Mt. is a perfect place to hold a conference. In a one word-perfect." (North Macedonia)</i>
Study question 5. How do you assess the opportunity for networking?
Comment 1: <i>"An exceptional experience, I met great people. I hope to see you again soon. Thank you all!"(Romania)</i>
Comment 2: <i>"It's a great thing to gain new knowledge, meet great people and get feedback on your work. Also, this congress is a great place to share experiences with people all around the world." (Croatia)</i>

CONCLUSIONS

Attending the AGES events in May 2019, students and young professionals from the Technical Faculty "Mihajlo Pupin" in Zrenjanin, University of Novi Sad (Serbia) were given an exceptional opportunity for the application of modern communication tools and connecting with teams from different scientific disciplines.

In the paper, the results of a survey of extracurricular activities provided to students and young professionals who participated in the 1st International Workshop "Pupin meets Nobel", which is a continuation of the activities of the AGES Student Section under the auspices of the Geoscientists Without Borders Project, are presented.

Extracurricular activities performed by AGES after accomplishing the project in 2017 are continuation of that approach and they are directed to students and young professionals dealing with geosciences, geophysics and petroleum engineering. We hope that our contribution will be visible soon.

In the study, we have presented how students and young professionals evaluate benefits of their participation in humanitarian projects and related education programs. The event held at Kopaonik Mt. in May 2019 was organized in order to promote international scientific cooperation and technical transfer through humanitarian research projects, as well as through additional education programs related to geophysics, geosciences and petroleum engineering, as a result of transnational mobility of researchers, young scientists and students from all over the world, but also of implementation of life-long learning. In that way, networking is possible, linking decision-makers, education, employers and industry stakeholders in order to improve work-based learning experience and promoting transfer of scientific knowledge and expertise to the civil society. In that way, our initiative to promote the idea of supporting humanitarian applications of Geoscience around the world is fully in line with the CEI Plan of Action, as well as with the Europe 2020 Strategy, the UN 2030 Agenda for Sustainable Development and the EU Macro-Regional Strategies also affecting the CEI area.

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