Team building’s social practice in large international projects

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1 Introduction

The scientific problems of our time are distinguished by their complexity, interdisciplinary nature, scale and require not only new research approaches, but also changes in organizational conditions in the strategy of their implementation. In order to ensure effective interaction in international and interdisciplinary research teams, special attention should be paid to the issues of team building. In this regard, the purpose of our study is to analyze the experience of team building in the Enhancement of Postgraduate Studies on Sustainable Agriculture and Future Farming Systems Project number 610383–EPP-1-2019-1-DE-EPPKA2-CBHE-JP and summarize the best practical approaches in organizing a set of activities aimed at ensuring effective teamwork.

During the implementation of the project, participants represented by representatives of 14 universities should promote interdisciplinary content and cross disciplinary approaches in solving scientific problems of our time.
the field of agricultural sciences and innovations in the system of agricultural education in Russia, Kazakhstan, Germany, Poland, the Czech Republic, and Estonia. Thus, the content of the international project itself is relevant to the practice of team building through broad public involvement in innovations in the agricultural sector and ecology, affecting the sustainable development of rural areas.

The problems of the activities of international teams usually affect interdisciplinary aspects. The authors of the article S. Mazzoleni, L. Russo, F. Giannino, G. Toraldo, C. Siettos note that the disciplinary diversity of the team in high-tech projects has great potential for achievements in innovative research and technology [1]. At the same time, there are issues of teamwork and the need to update the institutional policy of academic circles to ensure interdisciplinarity. Through the model developed by the authors with imitation of interaction between certain types of academic behaviour and the speed of knowledge advancement in an interdisciplinary team, and they detected the negative impact of the control policy. Thus, for our research, we can draw an important conclusion that strengthening control over the implementation of stages in a large-scale interdisciplinary project gives a much lower effect than team building.

The topic of team building in interdisciplinary projects is relevant for solving not only research, but also educational tasks. The author of the article Hsing-Yuan Liu in the course of the study established the relationship between trust and interactive behaviour in interdisciplinary teams [2]. Spontaneous communication between team members has the greatest positive impact on the rapid establishment of trust based on the results of the study. To develop approaches to conducting our research, it is important that spontaneous communication occurs in the process of informal interactions in team-building events. And, accordingly, a sufficient number of such events should be planned.

The strategic vector of the future development of Industry 4.0 requires new competencies. The authors of the article L.M. Kipper, S. Iepsen, A.J. Dal Forno, J. Agnes, D. Cossul tried to create a conceptual map of the competencies of the future [3]. The broad list of competencies includes, among other things, relevant to our research: interdisciplinarity, teamwork, joint solution of complex tasks, initiative, openness in communication, strategic vision of knowledge. These findings confirm the relevance of our scientific search for creating favourable conditions for the implementation of large-scale interdisciplinary and international projects.

The authors of the article A.K. Shrivastava, A.S. Ahluwalia, P.K. Kapur speak about the growing demand for interdisciplinary research [4]. In their research, they attempt to generalize groups of methods that are most applicable in interdisciplinary research to study and solve a wide range of problems related to business and engineering. The authors emphasize that the growth of interdisciplinary research is due to their ability to solve complex problems using tools from various disciplines. This conclusion confirms the relevance of our study of positive social practice of team building in a large international project [5, 6]. This approach can be found in a number of studies [7, 8, 9].

The conducted theoretic analysis of scientific publications, affecting aspects of the subject area of large-scale interdisciplinary, international studies, team building, confirms the relevance of our research. The development of team-building mechanisms and the creation of favourable working conditions are of particular importance in the situation of interdisciplinary and international research and research projects that unite the teams of several universities.

2 Materials and methods

The empirical part of the study of the social practice of team building in large international projects was carried out in March-April 2021. We applied the method of a formalized survey.
3 Results and discussion

During the visit, all participants of the seminar were involved in psychological trainings aimed at team building, and an educational intensive aimed at improving competencies in designing lectures and practical classes with different categories of listeners. Trainings and educational intensive in the form of a business game were conducted at a high professional level by the teachers of the host part – Bury State Agricultural Academy. Thus, it can be said that during the visit, the participants underwent psychological training and training in the field of professional pedagogical competencies.

During their stay at Buryat State Agricultural Academy, the participants of the full-time stage of the project were engaged in various types of activities: these were round table meetings with discussion of current tasks on the project. The exchange of opinions between the participants, representatives of not only different universities and territories, but also between developers of different modules was very useful. It became obvious in a wide discussion that some of modules have a more advanced level in achieving the project goals. Also, socio-psychological trainings and educational intensive courses became an important component of the visit, which were organically integrated into the program of the visit and made it possible to change activities, which generally increased the efficiency of work on the working tasks of the project. In addition, the psychologically connecting link was informal forms of communication.
the opportunity of which was provided during coffee breaks and friendly lunches and dinners. Thus, the high intensity of work processes was supported by a change of activities and effective informal contacts.

3. During the visit and discussion, we developed common approaches to the formulation and understanding of the modules being developed. The participants of the full-time stage, who are representatives of the working teams of the first, second, third and fourth modules, got acquainted with the content of all modules and at the round table discussed the learning outcomes that students (postgraduates in the Russian Federation) should reach as a result of mastering the program “Improving Postgraduate Training in the Field of Sustainable Agriculture and Agricultural Systems of the Future”.

4. The results of participation in the seminar were reported at the educational and methodological councils of the partner universities of the program, all project participants were informed about the decisions taken. The news is posted on the websites of the members of the scientific and educational consortium.

5. The stay at the full-time stage of the SAGRIS project was organized at a high level, both from the point of view of work processes, and from the point of view of socio-psychological and everyday comfort for all participants. A distinctive positive feature of the host party was hospitality and cordiality, which positively reflected on the effectiveness of the work of the seminar participants during the visit. The personal approach of the organizers, going beyond the circle of formal obligations, made the participants’ stay as comfortable as possible.

In addition to conducting a formalized interview, a questionnaire survey was organized in the international SAGRIS project as part of the questionnaire survey of participants in the face-to-face stage of team building. A total of 29 people took part in it. According to the results of the survey, based on a comparative analysis of changes in the average values of indicators for evaluating the effectiveness of team building, it was found that all measures gave a positive result. The data is presented in the Table 1.

### Table 1. Evaluation of the effectiveness of team building in the international SAGRIS project (on a five-point scale)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Average value before the full-time stage of team building</th>
<th>Average value after the full-time stage of team building</th>
<th>Indicator’s change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Accurate understanding of the goals and objectives of the project</td>
<td>4.3</td>
<td>4.9</td>
<td>+0.6</td>
</tr>
<tr>
<td>2. Understanding the relationship between the modules being developed, taking into account work in different teams</td>
<td>4.0</td>
<td>4.9</td>
<td>+0.9</td>
</tr>
<tr>
<td>3. Understanding your role in the implementation of one large and important international scientific and educational project</td>
<td>3.5</td>
<td>4.8</td>
<td>+1.3</td>
</tr>
<tr>
<td>4. Professional features of working with research and teaching staff of another university</td>
<td>3.7</td>
<td>4.8</td>
<td>+1.1</td>
</tr>
<tr>
<td>5. Knowledge of socio-psychological characteristics personally about a member of the module team</td>
<td>2.8</td>
<td>4.7</td>
<td>+1.9</td>
</tr>
<tr>
<td>6. The level of responsibility in the preparation of module materials</td>
<td>3.9</td>
<td>4.8</td>
<td>+0.9</td>
</tr>
</tbody>
</table>
7. Activity in testing developments and materials with graduate students and undergraduates

8. Focus on the overall result of the project

The overall average value of the indicators of the effectiveness of team building increased from 0.5 points to 1.9 points. The greatest positive value is noted in the increase in the indicator “Knowledge of socio-psychological characteristics personally about a member of the module team” – before the team building events, it was 2.8 points on a five-point scale, after the events – 4.7 points. The indicators “Understanding of one’s role in the implementation of one large and important international scientific and educational project” significantly (by +1.3 points); “Professional features of working with research and teaching staff of another university” (by 1.1 points); “Understanding the relationship between the modules being developed, taking into account work in different teams” (by 0.9 points); “The level of responsibility in the preparation of module materials” (by 0.9 points). The positive experience of team building can be used to develop and implement new organizational and methodological approaches in the development of agro-ecological education at the international level, effectively combining the efforts of representatives of the scientific and pedagogical community of several universities in solving scientific problems of our time.

4. Conclusion

The theoretical analysis of scientific publications and empirical results of the study of the social practice of team building in large international projects allow us to draw a number of conclusions:

- the relevance of team building is confirmed both at the theoretical and empirical level;
- the development of team building mechanisms is of particular importance in the situation of interdisciplinary and international research and projects;
- a research strategy and indicators for evaluating the effectiveness of team building have been developed and tested: an accurate understanding of the goals and objectives of the project;
- understanding the relationship between the project modules being developed, taking into account work in different teams;
- understanding one’s role in the implementation of one large and important international scientific and educational project;
- taking into account the professional features of working with scientific and pedagogical staff of another university;
- knowledge of socio-psychological characteristics personally about the members of the module team;
- the level of responsibility in the preparation of module materials;
- personal professional activity in testing developments and materials in practice;
- focus on the overall result of the project.
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