

**MULTINATIONAL ACTIVITY ON THE TOP OF  
OPPORTUNITIES FOR GIFTED - THE CASE OF THE PROJECT  
TALNET INTENATIONAL**

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**ABSTRACT:** El artículo presenta una experiencia de las actividades cooperativas internacionales on-line y presenciales para la juventud superdotada en un contexto de atención sistemática. Presenta los logros más importantes del proyecto Talnet-Internacional con respecto a la superdotación y a las actividades Talnet. Talnet (desde 2003) es un proyecto de identificación y trabajo con jóvenes de altas capacidades (13-19 años), interesados en la ciencia) que aplica actividades educativas on-line combinadas con actividades presenciales. Al proyecto internacional se unieron jóvenes de Czechia, Alemania, España y Slovakia: 40 participantes en la modalidad presencial y 75 participantes en la modalidad online. Suministra oportunidades de trabajar en equipos internacionales en materias profesionales (construyendo y programando robots, materias EU etc.). Es la actividad más desafiante y compleja entre las actividades educativas Talnet el ofrecer oportunidades de aplicar el potencial de los jóvenes de altas capacidades en actividades internacionales de equipo altamente m. Cofrontamos estas intenciones educativas y la experiencia de los participantes -en algunos aspectos (personales), de habilidades comunicativas y cooperativas.

**Palabras clave:** Experiencia internacional de actividades cooperativas on-line, Talnet Internacional, superdotación

**ABSTRACT:** The paper presents an experience of international cooperative online and face to face activities for gifted youth in a context of systematic care. We present the main benefits of the project Talnet-International with respect to giftedness and Talnet activities. Talnet (since 2003) is a project of identification and work with gifted youth (13 – 19, interested in science) that applies educational online activities combined with face to face activities. The international project joined youth from Czechia, Germany, Spain and Slovakia: 40 participants in face to face and 75 participants online. It provided opportunities to work in multinational teams on professional matters (constructing and programming robots, EU matters etc.). It is the most challenging and complex activity among Talnet educational activities by providing opportunities to apply the potential of gifted ones in highly demanding international team activities. We confront these educational intentions and participants' experience - in some aspects (self-activity), communicative, cooperative skills

**Key words:** Experience of international cooperative on-line. Talnet International, giftedness.

## **1. INTRODUCCIÓN**

Talnet is a project aiming to systematically identify and work with gifted youth (13-19 years) [1]. Specifically, it applies online educational activities combined with face to face activities. It was organised by the Faculty of Math and Physics of Charles University in Prague beginning in 2003, later in cooperation with other faculties, universities and science and research institutes in the Czech Republic. Topics of the educational activities come from natural sciences and mathematics.

Talnet offers the whole structure of educational and exploring activities to children who are recommended by their teachers or psychologists. Activities differ in topic, forms (face to face, blended, online) teaching approach, work load, complexity and applicability. We prefer active participation of children in rich learning environment according to the results of psycho-diagnostics tests. Nevertheless the children are tested by sets of standardised psycho-diagnostics tests during the first year of their activity in the Talnet project.

Since the beginning of the project we have confirmed that many gifted children need more and more challenging, e.g. demanding and complex, activities. The level of challenge may be perceived in many different aspects such as subject, problem solving, creativity, production and social aspects etc. The main purpose of this Talnet International Project was to offer to gifted children further opportunities for development of their competencies and to extend the offer of authentic educational and social activities. Especially, occasions to work in multi-national teams and communicate in foreign language seemed to be an appropriate instrument from the point of increasing educational rigor and challenge.

## **2. EDUCATIONAL PURPOSES OF MULTINATIONAL ACTIVITIES AS THE TOP OF EDUCATION ACTIVITIES IN RELATION TO OTHER TALNET ACTIVITIES**

In Talnet we develop opportunities for identification of gifted (or student's self reflections of his/her own preferences or abilities) and for further development of gifted children in broad varieties but consistently in some sequences. These sequences should ensure consistency and gradual progress in selected aspects that are relevant to revealing and developing

some abilities or skills. In this we concentrate (but not limit) on critical thinking, creativity, broad scales in rigor of the activities and departmental expertise, communication with experts and coevals, self-activity and courage to solve a problem, the ability to articulate and present one's own attitude, ideas, arguments and results. Much-needed development of activities that require stimulating team cooperation and collaboration with coevals is still very slow. Our approach works on assumptions of experts' attitudes, e.g. "High levels of thinking are best demonstrated by high levels of communication skills. The development of such skills is particularly important for gifted and talented pupils." [2] The offer of new topics and enrichment of the pupil as distinct from curriculum gives an opportunity to satisfy educational needs of gifted pupils. [3]

The reflected level of challenge should, ideally, increase during the educational course in Talnet. The intellectual demand or challenge of activities offered to gifted children might be modified by actual levels of other general competencies such as language skills. While the opportunities to communicate with expert and departmental expertise are covered by typical "normal national Talnet" educational activities the international project gives a greater opportunity to develop other above mentioned competencies. In this regard we consider this project to represent the most challenging and complex activity in Talnet by giving gifted ones an authentic chance to prove and use their potential and by giving them an opportunity to perform up to their abilities in highly demanding international team activities.

Let's focus on the main differences and asset of such a multinational project in comparison to other Talnet activities as it was indicated above and in comparison to other foreign or international activities. We emphasize multi-nationality because we want to distinguish a project where real cooperation among at least three nations arises from other international or foreign activities such as a bilateral partnership, an excursion or possibly an international contest or tournament. There are also more nations than two involved but the cooperation occurs rather within one nation (and competition among them).

Although the multinational project gives an opportunity to develop social and professional skills as other Talnet activities both of these dimensions gained a new meaning through the international cooperation:

The participants are exposed to opportunities to cooperate and communicate with each other in a foreign language about a professional topic, which might be for gifted students both attractive and necessary.

### 3. THE PROJECT TALNET INTERNATIONAL

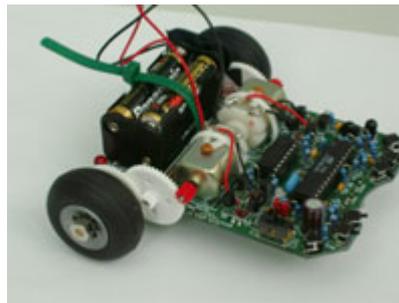
In the spring 2008, we experienced a pilot run of an international project for gifted youth interested in natural sciences, mainly physics. Talnet, as the main organizer, became a partner with the German *Kubus* project, Spanish *Estrella* project and Slovaks from P. J. Šafárik Univerzity. The experts from the German DLR (German Aerospace Center in Oberpfaffenhoffen) provided us a high-tech professional background.

The educational activities were launched in February 2008 with the online phase. We believe that the gifted ones require new incentives and professional activities that would enable them to satisfy some of the educational needs they have, so the main content of the project itself and of the online phase was a course in robotics accompanied by various discussion clubs about other scientific and European topics such as culture, politics, etc. The objective of the robotic course was to put a robot together and to program it to be able to cope with different tasks. Such a technical topic also enriched other natural topics in Talnet.

*Fig. 1: ASURO set*



*Fig. 2: Running robot ASURO*



The culmination of the online activities and the project itself was the face to face meeting. In April 2008, about 10 participants between 13 and 18 years from each country spent a week together in the Czech Republic. Apart from the possibility to work on the robots, there was also an opportunity to experience varied activities such as working with GPS or

geo-caching, a conference about the EU, a European quiz, mini language theatre and other team games. A very important part of the face to face meeting was our visit to the DLR in Germany. The purpose of the visit was a professional excursion at the DLR's Institute of Robotics (to see developments of real scientific robots), Satellite Navigation Centre and particularly the possibility to complete the robots and to move forward in programming with the help of DLR's experts. The possibility to work on the robots and to take part in the online activities after the face to face meeting remained till the end of May 2008.

While preparing the activities we focused particularly on offering a new challenging and enriching topic and developing communication and cooperation. The course in robotics and the assignments within it headed toward sharing information, advice or successes unlike typical competitions in programming.

A very important point of our interest in the project was the deliberate elimination of one's nationality. We thought that it would enhance the benefit resulting from the opportunity to use a foreign language and developing cooperation. Most of the activities were based on working in small international groups - members of those were changing in different activities. In most cases the international teams consisted of one participant per country and for that reason an active contribution of every single team member was essential and the communication in a foreign language as well.

#### **4. INTERSECTION OF THE EDUCATIONAL INTENTIONS AND PARTICIPANTS' REFLECTION.**

At the end of the face to face meeting the participants were supposed to assess the project itself (multiple choice questionnaire) and to describe their personal benefits (open ended questionnaire). We were trying to find relationships between our educational intentions and the participants' reflection. It is evident that the level of one's personal benefit is different according to his/her previous experience, skills and expectations. However, we think it is possible to find common tendencies in their feedback. In the following part we will focus on three aspects that we consider to be the most important in the project and we will try to find some connections with our educational intentions.

## Challenging topic

As mentioned above, one of the main aims of the Talnet International was to introduce a new challenging (technical) topic, which was represented by the robotic course. We were aiming to find out how actively they participated and whether they were able to succeed in this activity. The following charts (Chart 1 and 2) show how the participants became involved in the robotics - whether they had courage to deal with making the robot, which we consider to be a challenge for them, and whether they succeeded with the available support.

Chart 1. *Have you actively participated in putting together and soldering the ASURO robot?*

( $n = 35$ )

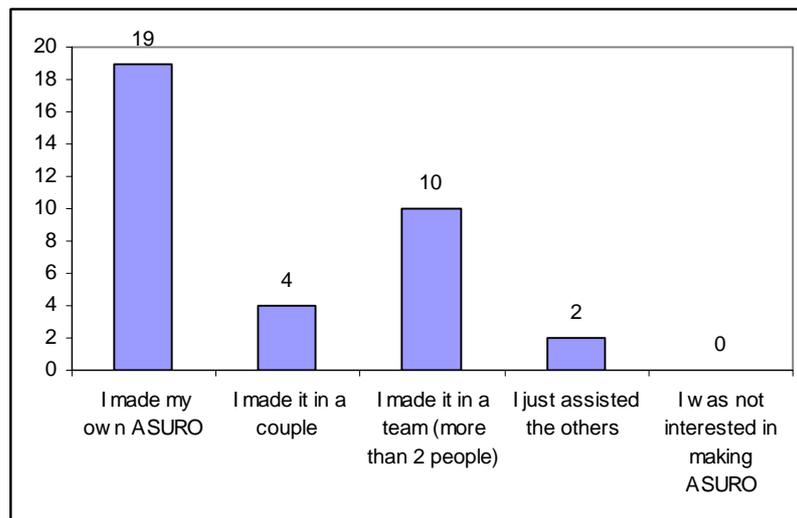
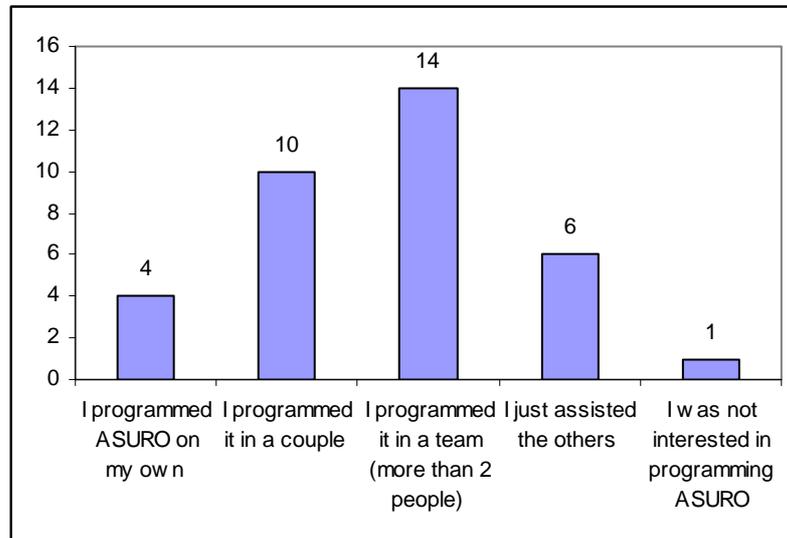


Chart 2. *Have you actively participated in programming the ASURO robot? (n = 35)*

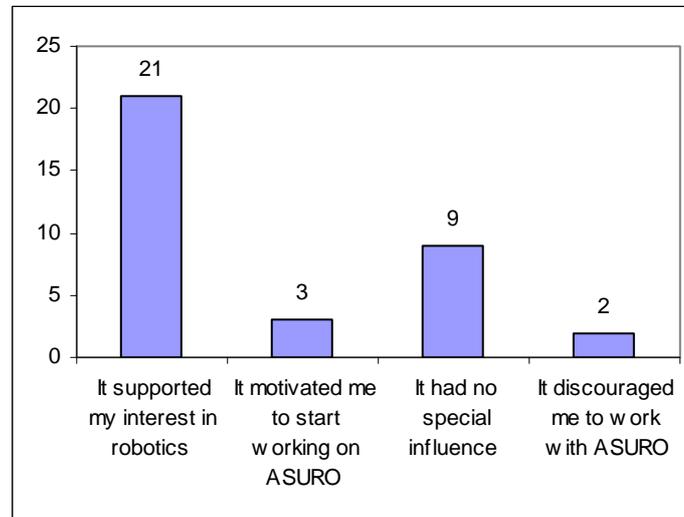


It is evident that most of the respondents actively participated in the robotics course and worked with the ASURO kit and that just a few of them were only assisting the others. For most of them it was a new experience concerning robotics and programming as well.

The participants were supposed to construct and program it only with the possibility of discussing it online with other participants and with the online support of experts. Some of them tried to cooperate during the construction phase by meeting the others from their national groups (Slovaks and Spanish rather worked as a whole group together), the others managed to work on them separately. As we can see, the participants cooperated more in the programming. On the one hand it was more difficult for them to do it on their own and on the other hand, there was an opportunity to work on the programming together in the face to face meeting.

Another aspect we were interested in was whether the visit at the DLR influenced their interest in robotics. Assessment of the participants is shown in the Chart 3 (n=35):

Chart 3. *Did the visit in DLR influence your interest in robotics?*



As we can see, the excursion to the DLR encouraged 69 % of participants in their interest in the robotics or further work with the ASURO robot. (*“I really enjoyed the work on the robots in DLR, it was a great experience”*. Thomas, 17 years). The visit offered some incentives for their professional development and enrichment by giving an opportunity to work on robots with the DLR’s experts and by the possibility to discuss related problems with them.

Nevertheless, from all the three charts it is obvious that there are some participants who were not interested in working on robots (or were not able to) and that some of them were discouraged by the visit at the DLR. The fact that some of the participants just assisted the others (2 in putting together and 6 in programming) could indicate that the activity was too difficult for them. We think it does not mean that they were not interested in working on it - in the offer of the possible answers they had a possibility to express that, but they did not. This could also influence their perception of the visit at the DLR. Moreover some of the participants expressed discontent about the organization of the work at the DLR and the fact that even the experts had not enough capacity to fix their robots (too poorly constructed). Besides, we can not ignore the fact that participants’ poor English could hinder them from participating and enjoying these activities. We deal with the communication in a more detailed way in the following part.

Fig. 3 *Cooperation on the robot*  
(Photo by Marián Kireš)



### **Communication**

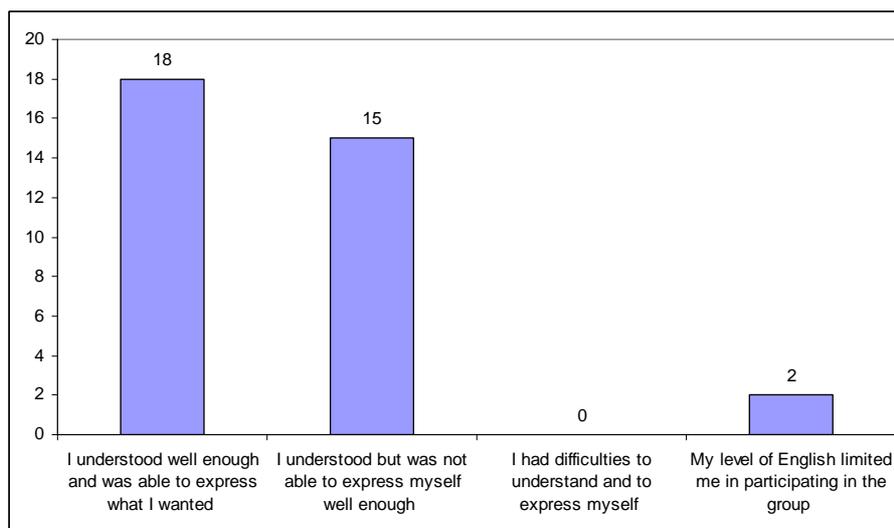
Another educational intention of the project was to give an opportunity to develop the participants' communication competencies, particularly to give them an opportunity to communicate in a foreign language (English) about a professional topic.

Communicating in English was for most of the respondents of primary importance when summing up their benefits from the project in their words. They realised the importance of the language skills even though they were focused on the natural sciences. (*"The project meant for me the first opportunity in my life to use English at work, but it also revealed my shortcoming in English which was really motivating for further development"* Martin, 16 years). They reflected that the possibility to practice their communication skills was set up during the project (*"The project broadened my horizons in communication, it helped me to get rid of the restraints on speaking in front of people in English"* Jakub, 17 years).

It is clear that a certain level of knowledge of a foreign language is the basic condition for communicating in it. The level of passive English

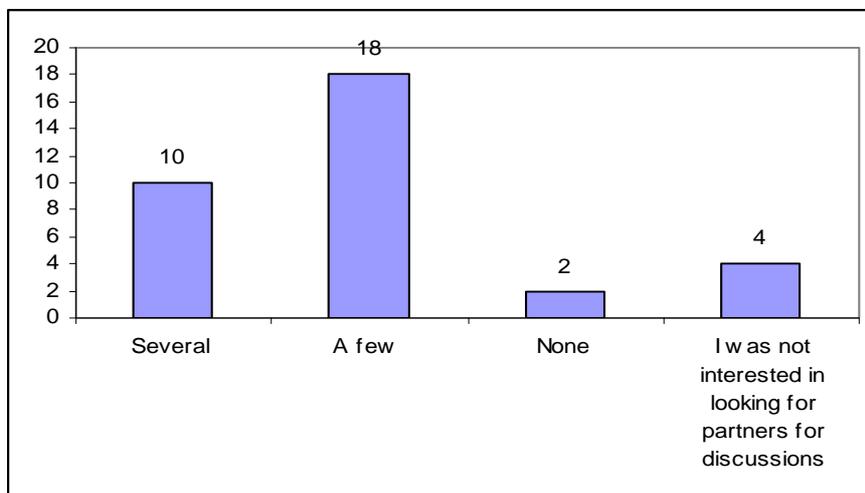
(understanding) of youth was sufficient. However Chart 4 shows that nearly a half of the participants were limited by the low level of their English - they felt that they had not been able to express themselves well enough.

Chart 4. *How do you feel about your English?*



With respect to communication we also tried to find out how the participants from different nations had been able to communicate with each other considering the knowledge of English. We asked them whether they found a good partner out of their national group for discussing the topics they were interested in and even whether they were looking for such person. The answers (n = 34) see in the Chart 5.

Chart 5. *Did you find a good partner out of your national group for discussing the topics you are interested in?*



We can see than only 4 people answered that they had not been looking for partners for discussions and 2 did not find any. The others (28 out of 34) were looking for them and found them.

It is evident that there are a lot of factors influencing these answers, such as level of English, interest in communicating, common topic etc. But the answers also testify about the character of the group as a whole. We see a very important point in the fact that most of them were looking for a partner for discussions and that they were willing and able to communicate.

### **Cooperation**

The most complex intention of Talnet International was to develop their competence to cooperate in a team. We were consistent in adjusting the activities for working in small international teams and we tested various topics and forms of the multinational team activities. The feedback from the participants indicates how they assessed their level of cooperation on the face to face meeting. We pursued the cooperation in two dimensions: whether the activities made them cooperate and the feeling about their contribution to the teamwork. (See the Charts 6 and 7)

Chart 6. *Did the activities force you to cooperate?*

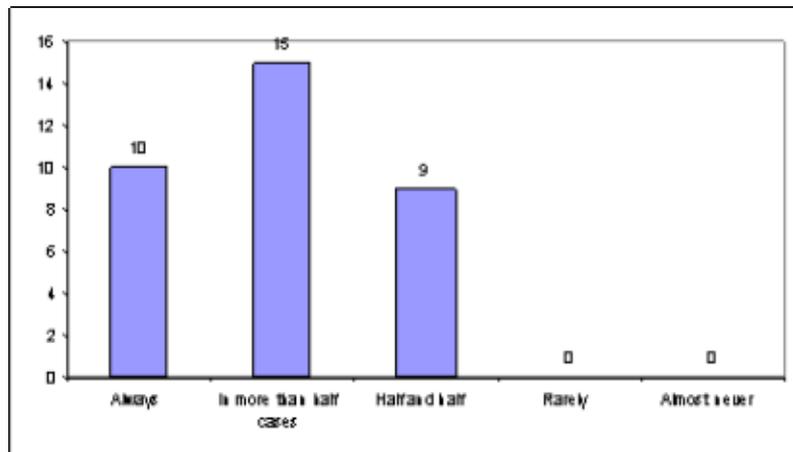
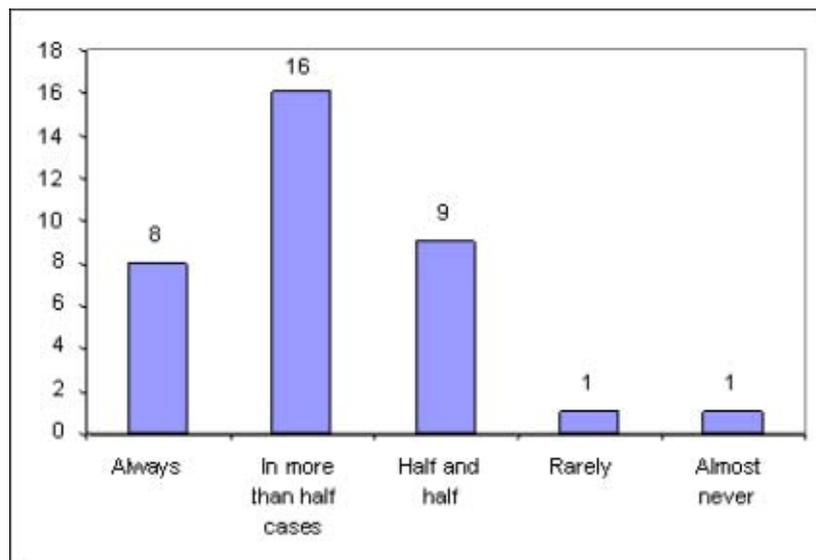


Chart 7. *Do you feel you contributed to the teams you participated in?*



As we can see, the participants were made to cooperate, and the vast majority of them had a feeling that they had contributed to the teams. On the basis of this we presume we were able to create stimulating and favourable conditions for the development of the cooperation skills. Unfortunately, we are not able to say to what extent they really developed themselves in this aspect. There is no evidence and we can just supplement the charts with an appraisal in participant's words: *"The project helped me to be able to participate and cooperate in team"* Peter, 17 years.

Nevertheless, we cannot overlook the two participants who answered they had a feeling they had contributed to the team rarely or almost never. Our observations made during the project show that the teams were usually differentiated according to participants' language skills. For example the team leader became a participant whose level of English was advanced enough and usually the highest. He/she was able to help others to express themselves or to rephrase what they wanted to say to make it more comprehensible for the others.

## **5. DISCUSSION**

### **What are the main factors influencing success of the project?**

It is necessary to emphasize that there are some important factors that influence the level of success of such project as a whole and that we observed during the project and particularly during the face to face meeting. In the first place it is the communicative level of English which is a crucial condition for communicating and cooperating within teams. We also believe it is better if the group is rather homogenous as for the age of the participants as for their interest.

### **Cooperation of the organizers and instructors as a side-effect**

We would like to mention an indirect effect of such a multinational cooperation the project brought. We became aware it offered an opportunity for instructors and people working with gifted children and youth to share experiences and exchange knowledge. The project supported combining methodical and pedagogical approaches from different countries and spreading an experience of such a combined project (online and face to face activities) as a type of activity for the gifted ones.

## **6. CONCLUSION**

The aim of this paper was to pose questions concerning the project activities and confronting them with our purposes. The action research of the project Talnet International was carried out in order to verify whether it is possible to consider a multinational project structured in this way as an activity on top of the opportunities for gifted youth within the Talnet

project. It was supposed to show some of the further possible ways of thinking in developing the project.

The participants' reflections showed that such a project can offer new challenges for gifted youth which they considered more demanding in a certain way in comparison to their previous experience and the available offer in Talnet.

We consider the following points to be the main benefits of the multinational project:

1. New and challenging topic in a dynamically developing field of science and promoting interdisciplinary approach
2. Communicating in a foreign language about a professional issue
3. Realising the importance of language skills also for those focused on the natural sciences
4. Cooperation in teams with culturally different individuals

We summarized what we perceive as the main benefits but also what were the main barriers of successful cooperation or greater asset. One of the significant barriers was the level of the language. Nevertheless, on the basis of this reflection, we pose a question regarding how we should follow up. We can offer some online activities involving English in order to eliminate the insufficient level of the language skills. Yet, it is truly difficult to create stimulating and favourable conditions for actual online cooperation. But we indicated we were able to create conditions for teamwork. This is probably going to be the main challenge for us: At first to eliminate the low language knowledge and to create conditions for the cooperation in the activities of this sort again.

## **7. REFERENCES**

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