

International Teleconference Project «Environmental Issues of the World» in Teaching English to Geoscience Students

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Abstract

The international teleconference project is an effective method of the team based learning model in English for Specific Purposes (ESP) as well as the CLIL context. This research offers an international educational model of the proposal titled “Environmental Issues of the World.” The proposed three-staged project was centered around multinational, multi-dimensional frameworks and related disciplines. The stages were: Pre-teleconference (2 months), a series of teleconference (4 events) and Post-teleconference (1-3 months). Through these steps students developed cognitive, communicative and professional competences with all parties concerned. Three uniquely qualified groups of Russian and American students and professors were involved in the project: Geoscience, English Language Teaching specialists and Linguistics.

Keywords: Geoscience students, Environmental Issues, Teleconference Project, Interdisciplinary, ESP, international collaboration

Introduction

Environmental issues, for bachelor students, are of high importance in Russian federal educational standards. For example, education of geoscience students at the bachelor level, includes such cultural competence as raising student's awareness of (1) the natural environment; (2) society; (3) other people and themselves; (4) the motivation to be guided by this obligation in their professional activities; and (5) the ability to use/apply knowledge in the field. These concepts were based on scientific approaches that helped shape students' (1) attitudes, concerning humans relationship with the environment and (2) life safety issues and the ability to use scientific knowledge in their social and professional activities (Federal State Educational Standard of Higher Education, 2014).

The purpose of the project was to raise environmental awareness (the ability and willingness to understand the role of environmental protection and environmental management for the development and

preservation of civilizations, the challenges of sustainable development, individuals in their relationship with the social system and the natural environment and the risks associated with human activities) for Russian and American students in the discipline of Geoscience. This research was also pertinent to students in related disciplines. The growth of ESP terminology, as well as the raising of General English skills, were the key issues in English language curriculum.

These goals can be achieved through the implementation of international teleconference projects in a Russian University and foreign partner universities as part of the English language curriculum (Mishlanova and Polyakova 2011).

Project Methodology

Being unique every international project involves different methods of data collection and analysis. The researchers decided to apply a Learner-Centered Approach (Nunan 1998) as well as the Content and Language Integrated Learning Approach (CLIL), in

order to achieve the goal of utilizing real world materials through launching an international teleconference project «Environmental Issues of the World» in teaching ESP to Geoscience Students.

The researchers were inspired by the tendency of modern world teaching; in an effort to apply real-world approaches into the classroom (Alstrad-Davies, 2014). The researchers argued that real-world examples helped students raise their motivation to increase their language command. In addition, the researchers argued that real-life examples elevated student concern for the environment.

In the current research, the real-world is signified by a lively, virtual communication, for both students and teachers. This research took place in Russia with peers from the USA during a unique series of online meetings during the Spring 2019 semester.

The Participants

The participants were students and professors in Geoscience education, from Perm State University as well as other universities in the United States. In addition, Linguistics and English Language Teaching specialists participated from PSU.

The Russian Geoscience students (both undergraduates and graduates) learned new terminology in ESP classes, lectures and seminars. The students discussed specialist topics with professors of Geology, Ecology, Geography, Geochemistry and other subjects.

The US Geoscience students (both undergraduates and graduates) prepared presentations on the environmental issues in the USA.

The linguist students familiarized themselves with the terminology and definitions of a particular subject area in the EAP translation studies. They also observed the teleconferences for their future ESP teaching practices.

English Language Teaching specialists developed ESP materials in collaboration with Russian and American professors from partner-universities.

Later, a group of geoscience and law students joined the project in both countries respectively. The focus of their research

was on ecological issues (water quality), environmental justice, and legal regulations of water pollution in Russia and the USA.

The project real world materials

The consultants and scientists provided the participants with relevant articles and textbooks centered on geoscience topics. The Russian students discussed the urgent environmental issues of the Perm Region as well as other locations (The Kizel Coal Basin, the Territory of Verhnekamskoye Potash Deposit, the Vishera River Basin) (Khayrulina 2014; Maksimovich and Khayrulina 2011). One of the key materials was a textbook on geochemical barriers and environmental protection, created by N. Maksimovich and E. Khayrulina. The students found interesting information regarding the environmental consequences of placer mining in various areas of Perm Krai, the effect of sludge settling on the landscape and the pollution of the Pashiika River as well as other Geo science issues (Maksimovich and Khayrulina 2011).

The students from the United States, selected a number of topics, ranging from salinization of fresh water in the northeastern United States (Kaushal et al. 2005) to the Flint Water Crisis in the State of Michigan (Glenza 2018) to environmental justice issues and guided environmental educational tourism in the State of Michigan (Lane, Stoltman 2016).

Some of the articles were centered on water issues in Germany, Australia, and Canada (Salama et al. 1999; Matheson et al. 2018; Gibbs et al. 2017). Choosing the articles, and other materials, the researchers tried to elevate the students awareness on global perspectives as well as raise concerns about Geoscience issues.

In the process of reflecting on this topic, students gathered additional information about abandoned mines and quarries in the United States and in Russia. This work was particularly relevant to the Perm region, since there are a number of abandoned mines and quarries. The researchers based a discussion centered on the article "Abandoned Mine and Quarry Accidents Claim Several Lives per Year" by Hobart M. King as an English

language original source (King H.M.). The students created short presentations, of their own. These presentation outlined the problems of the abandoned mines, quarries and even settlements as well as towns in Perm region such as Severnaya mine (Kisel area), Shirokovskiy (Gubaha district), Shumikhinski (Gremiachinski district) and Gubaha.

The outcome of this step was the creation of a glossary of geoscience terms by the geoscience and linguistics students. To gain the understanding of term "formation" they students analyzed the glossaries of geoscience terms, which were compiled by Australian Science Museum specialists.

About 300 words directly correlated to the geoscience topics that were identified by the PSU students and used in the consequent steps of the project. Some of the terms included: *consistent backfill, efficient waste management, environmental impact, introduction of modern processing technology, mine openings and residues, ore reserves potash fertilizer production, salt content, pollution, underground water, mining, salinization* and others. In addition, a QUIZLET platform was created in order to enhance teaching phonetics, spelling, semantization, exercises, tests, learning games for geoscience field.

The project structure

The project was comprised in three stages: (1) Pre-teleconference (3 months), (2) Teleconference (4 teleconferences in January-March, 2 hours each) and (3) Post-teleconference (1 months) stages. The conference took place during the 2018-2019 academic year in Perm State University, Central Michigan University (Michigan), Delta State University (Mississippi) and the University of Louisville (Kentucky).

1. Pre-teleconference stage

At this stage, students acquired all the necessary skills for further professional communication since collaborative real world materials were developed here.

During the first step, of the Pre-conference stage, the students examined the materials mentioned above.

The second step of the Pre-conference stage was designed to assist the geosci-

ence students at PSU in preparing presentations on the chosen topics for the teleconference. Some of the students concentrated on the topics discussed in the articles, while the others came up with their own ideas. The topics included in this stage were: "The Kizel Coal Basin", "Permian Geological Period", "The Rivers of Perm Krai", "The Balatovo Park", "The Kungur Cave" and others.

American partner-universities formed their own groups of creative and interested students. These students proposed discussions on major Geoscience issues, such as; water crises in the USA – the Flint Water Crisis and its aftermath, The BP Oil Spill, in the Gulf of Mexico, and its effect on the environment of several states, Human/Environmental Interactions, Water & Its Relationship to People.

2. Teleconference stage

This stage consisted of four videoconferences which were devoted to different ecological matters: "Learning Science in Non-Traditional Places" (*Ecological Tourism in the USA*); "Flint Water Crisis; Human/Environmental Interaction in the USA", "Environmental Issues in Perm Region", "Legal Regulations and Environmental Safety".

The one-hour Skype conferences were held from January to March, 2019 (Spring semester 2019). During the Skype meetings, the students created presentations, discussed issues that were directly related to underground water pollution, the quality of water in their regions, accessibility of drinking water, river cleaning camps, environmental justice etc. The Skype discussion setting was friendly and relaxed. Apart from the water issues the students initiated discussion of their everyday life and cultural heritage. It is worth mentioning that the second and the telebridges were with the same DSU group, which made the communication much easier and open.

3. Post teleconference stage

The post-telebridge stage included gathering American and Russian students' feedback on the telebridge activities as well as discussions related to what the

students had learned from the teleconference experience. It included the students' assessment of the telebridging project. The American and Russian participants completed two assessment instruments that were developed by the Delphi Teaching and Learning Center of the University of Louisville. These instruments, "Ideas to Action" (1) "Student Evaluation Form" and (2) "Student Reflection Form," asked the students to reflect on their attitudes towards the international teleconference project experience and what they gained from it.

Generally, the students were very positive about their experiences and expressed their willingness to participate in the future telebridges.

Conclusion

Although there has been tremendous development in the English language teaching approach, and ease of information accessibility, over the global network, Russian Geoscience students still have a modest level of English language competence.

Due to the intercultural project "Environmental Issues of the World" Russian and American students were exposed to multicultural scientific and professional environments, therefore overcoming academic isolation.

The international project was up for discussion and could cover diverse topics such as salinization in the Ural Mountain region, potash fertilizer production, etc.

As a result of this learner-centered approach and the CLIL approach, the level of involvement, professional understanding, skill development and terminology competence increased dramatically. Participation in the project allowed Geoscience students, as well as students from other disciplines, to see how the same ecological phenomenon, subject, problem or situation were perceived and acted upon by representatives of other cultures. Consequently, students could contribute to academic and professional work following graduation and appreciate mutual engagement in resolving geoscience issues.

The advancement of educational technology can pave new avenues in

communications between cultures, disciplines and academic environments. All students and universities involved in this project were able to take advantage of these innovations in a way that was mutually beneficial to all.

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