

Dear Justin Dillon,

I am writing to express my appreciation for the 2009 ESERA Travel Award for Less Experienced Researchers, and provide a short report describing my activities during my study visit, and also how this award has benefited me as a young researcher.

As you already know, I applied for the 2009 ESERA Travel Awards for Less Experienced Researchers for a study visit at the University of Santiago de Compostela in Spain, to work with Maria-Pilar Jimenez-Aleixandre. Marilar is well known for her work in argumentation and socio-scientific issues, an area within my research interests. The plan of my visit was to engage in discussions that would help me to further develop my research skills, and gain a deeper understanding of various frameworks for analyzing arguments. The visit took place from May 31st until June 12th, and during the two weeks of my visit I was placed at the Department of Education at the University of Santiago de Compostela, where I had the opportunity to meet the faculty and staff of the Department. During the two weeks I worked more closely with Maria-Pilar Jimenez-Aleixandre, and some of her PhD students.

The main part of my visit was dedicated on data analysis, with an emphasis on argumentation. Initially we discussed data from a project with elementary school students constructing arguments regarding a socio-scientific issue (Evagorou & Avraamidou, 2009). These were written arguments provided by groups of students throughout a sequence of lessons, showing how, and if their arguments developed through a specially designed instruction. Based on those data we talked about frameworks for analyzing written arguments, and ways to analyze the specific data. In my previous research I worked with written arguments, but the emphasis of my analysis was on the levels of the arguments, using the modified version of Toulmin's (1958) framework by Erduran, Osborne and Simon (2004). The emphasis of this new analysis was on the justifications of the students (e.g. Kelly, Druker & Chen, 1998; Kelly, Regev & Prothero, 2008), and the categories of the different justifications that the students were providing (e.g.

Jimenez-Aleixandre & Pereiro-Munoz, 2002). An initial analysis of this data set helped me clarify misinterpretation that I had regarding the different components of written arguments, and focus on the change of students' justifications, rather than only on the change of the levels of their arguments.

Using the same data analysis approach as the one described above, we also analyzed written arguments from two different classes (12-13 year old students) working on a socio-scientific issue, that of the proliferation of the grey squirrel – an introduced species in the UK (Evagorou, 2009; Evagorou & Osborne, 2007). The written arguments of the pairs from the two classes were analyzed in terms of the justifications (different categories of justifications), and also in terms of the change in decision making for all pairs from the two classes. What was interesting in this analysis was that the two classes were very different in terms of ethnicity and socio-economic status of the students, and their justifications were also very different in the two classes. More specifically, the students from the class with the ethnically diverse, non-native population were identifying with the grey squirrels, the introduced species. For example, students from the class with the native population provided a wider range of justifications than the students from the class with the ethnically diverse population. Also, the latter students focused on the inhuman/racist/illegal part of the issue but the native population students used data to change and support their justification. Through the exploration of those data we decided to also focus the analysis on this identification that the students had with the species – and with the term identification we refer to the work by Lopez-Facal and Jimenez-Aleixandre (2008). More specifically, we decided to (a) examine how students from different backgrounds identify themselves with actors in a socio-scientific issue and how that affects their claims and justifications, (b) explore how the evidence from the learning environment has an effect on the change of students' decisions, and (c) examine the change of pair decisions during the process, and the patterns in this change. During the visit we worked collaboratively and analyzed the data, and we plan to continue working on this analysis with the hope to prepare a manuscript exploring the issue of identification and argumentation through a socio-scientific issue.

Other than working on data analysis I also had the chance to present my work to the science education group at the University of Santiago de Compostela, and also attend presentations of the research work of the science education PhD students of the Department. That was a useful experience since most of the PhD students of the group research in similar areas, e.g. argumentation and socio-scientific or controversial issues, or argumentation and epistemic aspects, and an insight into their work and their frameworks of analysis provided new ideas. Additionally after the presentations I had the chance to exchange papers and discuss the data and the analysis with some of them, participating in that way in a new community in which I can look for support for my future research projects.

During my two weeks at the University of Santiago de Compostela I also had the chance to familiarize with the array of projects that the science education group undertakes, and participate to one their project meetings. More specifically, I participated to one of the meeting for the *Mind the Gap* project, a European project that aims to ‘improve the way secondary school science is taught in European schools by bridging the gap between theory and practice in inquiry-based science teaching’. The emphasis of that meeting was on argumentation, and ways to support teachers in engaging their students in argumentation – an area that I have just started exploring. During the meeting the research group shared resources they prepared that would help teachers understand the structure of the argument, and resources that can help students start teaching science as an argument. Furthermore, during my stay Marilar and her group were preparing a conference on Darwin and argumentation, and through my interactions with the group I learned a lot about Darwin’s work, students’ ideas about evolution, and how argumentation can be used as a way to support students’ learning about evolution.

In summary, during my two weeks visit at the University of Santiago de Compostela I had the opportunity to work with an experienced researcher, share data, and explore ways of analyzing written arguments, with an emphasis on justifications and change in decision making. These ways of data analysis are different from my previous work in argumentation, and in that way I understood in more detail the different frameworks that

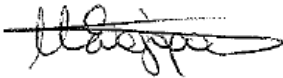
people use when analyzing arguments, and where to apply each one. Additionally I had the opportunity to look at the data in terms of how students identify with the socio-scientific issue they are studying, and we are in the process of preparing a manuscript exploring this issue. Through this process of data analysis, other than improving my data analysis skills, I also had the chance to familiarise with new readings, especially in the area of written argumentation and identification.

Other than meeting and working with experienced researchers, the ESERA travel award has also provided the opportunity of meeting with less experienced researchers – the PhD students at the University of Santiago de Compostela – and networking with researchers from other countries. Even though such an opportunity is also provided through international conferences, this is different because the length of the stay allows interactions with the people, and more time to exchange ideas, and start building collaborations.

Finally, during the two weeks stay I had the opportunity to get to know the Galician language and culture, and appreciate the differences and similarities between the different cultures, started learning Spanish, and enjoyed the Galician food and hospitality. I look forward to continuing my collaboration with Maria-Pilar Jimenez-Aleixandre and her group, and I hope that ESERA will continue providing such valuable opportunities to less experienced researchers through the Travel Awards.

Sincerely,

Maria Evagorou

A handwritten signature in black ink, appearing to read 'M. Evagorou', with a horizontal line drawn through it.

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