Mathematics education PhD summer school 2011

A small PhD summer school was arranged in Tallinn, Estonia, during the third week in August. The application for funds for a Nordic summer school had been unsuccessful and the universities of Agder and Oslo, with colleagues from other universities in Norway combined resources and man-power to fill the gap. Seventeen PhD fellows attended, most were from Norway, two from Sweden and one from Denmark. Most important to the success of the event were the help from Madis Lepik and Kirsti Kislenko, and the University of Tallinn who gave us use of rooms in which to meet, the summer school would not have been possible without their help and support, for which we are most grateful.

The programme combined interactive presentations and working groups in which participants were able to discuss their research plans or current writing with tutors and each other. The presentations were:

The unit of analysis in mathematics education research
Paul Ernest, University of Exeter & University of Oslo

A critical reflection on a research report
Anne Berit Fuglestad, University of Agder

Analysis of results from international tests of students' performance in mathematics (TIMSS and PISA)
Liv Sissel Grønmo, University of Oslo

The mediating role of teacher's use of semiotic resources in pupils' early algebraic reasoning
Raymond Bjuland, University of Stavanger

The role of mathematics in mathematics education research
Frode Rønning, NTNU and Sør-Trøndelag University College

Achieving a PhD through publication: a personal reflection
Kirsti Kislenko, Tallinn University

Epistemology of mathematics education research: "Work in progress"
Simon Goodchild, University of Agder

Three of the participants at the summer school were invited to write a personal reflection of their experiences:

Janne Fauskanger (PhD fellow at University of Stavanger)
With less than one year of experience as a PhD student, I was somewhat insecure about what to expect from my first doctoral summer school in mathematics education. However, I found the programme interesting, with plenary lectures in the morning and afternoon and group activity with guidance for several hours in the middle of each day. This organization of the days turned out to be good for me. The plenary speakers were well-known professionals in the field. So, I went to Tallinn with a short presentation of my research project and some unclear research questions in my luggage.

The students' presentations were varied and gave insight into a wide variety of research focuses. The focuses of the plenary lectures were interesting, but not all the titles seemed initially to be relevant to my research. However, the lecturers presented unpolished plenary presentations that showed their uncertainty, thinking, reflection and quest for answers. The lectures thus generated real discussions that made the presentations highly relevant for PhD students. I received good ideas for my dissertation during several of the plenary lectures.

The group activity sessions were most directly relevant to my project. Getting the opportunity to work closely with other PhD students in the same area of interest as myself, and with professors, was instructive. Moreover, four students and two professors in one group was luxurious. It was also luxurious to enjoy one to one supervision several times during the week. Before the summer school I had completed a small part of my study and was heading into a second and larger part of my project. The research questions associated with this part of my project were very vague, and I decided to use the week in Tallinn to work on these questions. My research questions were presented, discussed, criticized and dissected, which at times was quite frustrating. The idea that a PhD might not be anything for me, hit me several times during the week! Nevertheless, when I went from the last group discussion, my research questions were much closer to what I hope will be the "ultimate" research questions of my project than they would have been without the good and critical discussions, as well as the specific suggestions I received from both students and professors.

In addition, the summer school provided me with at least three of the following bonuses: The first bonus is learning to know other PhD students, especially those working in my own area of interest, which makes it possible to share literature, ideas and thoughts and maybe even write something together in the future. A second bonus is the invitations from our group leaders to send them questions also after the summer school has come to an end. I look forward to being able to get their comments on the processed version of my research questions. A third bonus is to know that most PhD students sometimes have the feeling that they want to give up, a feeling that fortunately dissolves for most people.

Ida Friestad Pedersen (PhD fellow at ILS, University of Oslo)

I have just started on my fourth, and final, year as a PhD-student in mathematics education. During this time, I have been fortunate enough to participate in three doctoral summer schools; the final one being held this autumn in Tallinn. The summer schools have offered opportunities to meet and discuss with PhD-students and professors from other universities, and I have found them both enjoyable and instructive.

I came to Tallinn juggling several ideas and perspectives; I had (more or less rough) drafts of some papers, and ideas for a final data collection. I hoped participating in the summer school could (a) give me ideas for how to use the "Kappe" to gather loose ends and (b) receive feedback on some test items that I have developed.

The programme mainly consisted of plenary lectures and group sessions. In the group activities, the focus was on students' individual projects and current writing. The groups had a great deal of autonomy, and in my group we split our time between group discussion, individual work, and one-to-one conversations between students and supervisors. This flexibility made it possible to adjust the group activities to the individual students' needs; some wished to discuss a theoretical framework (*cultural historical activity theory*), while others wanted help with research questions or data collection. Personally, I had valuable feedback on my test items from the group supervisors (which also helped clarify the research focus of the paper the data will be collected for), and the discussions during group activities gave me a clearer idea of how the theory chapter of the "Kappe" may be written in order to be relevant for all my planned papers and help bind them together as a whole. Here, I also found the plenary lectures helpful. These lectures were highly interactive, where listeners were encouraged to ask questions and offer comments, resulting in interesting and instructive discussions that gave me more ideas for the "Kappe". One lecture, where a former PhD-student talked us through her journey through the doctoral studies, was particularly useful in this respect.

To summarize, I personally found both the plenary lectures and the group activities useful. But there is a third component to the summer schools, which is equally important: The informal socializing. In the breaks and evenings, there are ample opportunities for discussing our work with members of the other groups, or simply to get to know each other better. Being a PhD-student can, in a sense, be lonely work, and it feels good to make friends that are in the same position and meet the same challenges!

Kristina Raen (PhD fellow at University of Agder)

I had been a PhD research fellow for just two weeks when I went to the summer school. I was looking forward to the trip, both because I had

never been to Tallinn before and because I was eager to get to know "the right people" and to work on my research question.

All of us stayed in a quite nice hotel. Meal times provided an opportunity to spend much time together so that we had opportunities to ask short questions, give short tips or just to be social, getting to know each other; the food was of second importance! The hotel was within walking distance to both the old town and the university. At the university we had lectures from the tutors, student presentations and group activity. It was nice to get an overview of how far the other students had come, what subject they focused on and what they would like to achieve in the summer school. I formed the impression that everyone struggled with something and could use some discussion and supervision.

Being new to mathematics education research I did not know every expression and reference used, but I understood most of it. And what I felt as important was that I heard them in a context, and I hope I will soon become comfortable with the specialised language faster than if I started reading it all today.

The group sessions were great, because then we spent a lot of time just focusing on me. We were just three students in my group, so in a two hour session it would be more than half an hour where the whole group could discuss each student's challenges. This was where I made most progress in my work. I gained some new perspectives, realized some problems with some of my ideas, had some tips for what to do next and had some concrete tasks for the next few weeks.

Now I am looking forward to next year's summer school where I am going to have new challenges.

Looking forward to 2012

The application to NordForsk to support a summer school in 2012 was successful. The summer school will be held in Tallinn, June 11–16. We hope there will be participants from all the Nordic and Baltic countries, the summer school will accommodate between 25 and 30 PhD fellows. Four guest experts have accepted our invitation to contribute: Professors Barbara Jaworski, João Pedro da Ponte, Eva Jablonka and Jeppe Skott. PhD fellows from the Nordic and Baltic countries who wish to express an interest in participating in this event should contact Simon Goodchild at the University of Agder (simon.goodchild@uia.no).

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