An analysis of arguments for and against the CAS

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ABSTRACT

As is well known Finland has been one of the most successful countries in three successive PISA tests in the comprehensive school level mathematics. On the other hand, the educational policy adopted in upper secondary school mathematics education has been rather moderate, perhaps we could even say conservative. Unlike in many other European countries, CAS has not been introduced into mathematics education in Finland on a large scale.

My presentation is going to deal with an on-going study project aimed at classifying and understanding various arguments which have been given in order to justify attitudes both for and against the use of CAS into upper secondary school mathematics education. The study consists of two parts: a qualitative one and a quantitative one. The qualitative part is made up of the interviews which I have made with six influential experts of mathematics and mathematical education who have a central role in forming the educational policy in Finland. Their arguments both for and against the use of CAS are examined in this part of my study. The quantitative part handles an inquiry about prospective mathematics teachers' notions of the pros and cons of the use of CAS. Both the themes handled in the half-structured interviews and the statements of the inquiry are based on the points of view which have emerged from earlier research (Burrill et al. 2003, Drijvers 2002, Gardiner, 2001, Guin et al 2005, Thunberg & Lingefjärd 2006), which allows assessing the degree to which attitudes in Finland, respectively, are either in line with or deviate from the argumentation presented in other countries. In my presentation I am going to deal with preliminary results of both studies. According to that part of the data which is already analysed prospective teachers evaluated CAS applications among the least important possibilities to apply technology into mathematics teaching. Practically all of the informants did not believe to take CAS in use during the three nearest following years. The estimation of the probability of the taking CAS in use was almost systematically lower than the estimation of the importance of CAS.

Keywords

CAS, attitudes, educational policy