ICT SUPPORTED LEARNING OF MATHEMATICS IN KINDERGARTEN

Per Sigurd Hundeland and Ingvald Erfjord

University of Agder, Norway

Keywords: Mathematics, ICT, Kindergarten

PROJECT OUTLINE

The project ICT mediated Learning of Mathematics in Kindergarten\(^1\) (ILMK) aims to develop and disseminate experience from implementation and use of ICT for preschool children’s learning of mathematics in kindergarten environment. In this poster, we present plans for the project and initial research questions, including a status for research in this area.

Recently, there has been an emphasis on implementation of mathematics in kindergartens and on use of ICT in kindergartens, in Norway explicitly outlined in the national curriculum for kindergarten from 2006. In a review of research literature on ICT use in pre-school settings, mathematics is not mentioned (Plowman & Stephen, 2004). We see this as an indication to the need of giving attention to this field. Lately, in a review of studies focusing on young children, ages 3 to 6, and learning with digital media, Lieberman, Bates and So (2009) give a list of important lines of research in this area. There they point us to some research focusing on how digital media support children’s early learning of mathematical concepts (p. 275) and how collaborative learning and ability to interact can be facilitated in what they denotes as well-designed digital technology.

In our project, a number of ICT-applications developed for children will be adapted to and implemented in the kindergarten environment with children aged 4 - 6 years. In our research setting, we will attend a co-learning agreement (Wagner, 1997) with kindergarten teachers, which is a continuation of the TBM\(^2\) project in Norway. We want to give special attention to children’s learning of mathematics supported by ICT, and to the communication between children and the kindergarten teacher in this learning process.

Initial research questions:

1. How do kindergarten teachers implement ICT-applications in mathematical learning activities? What kinds of challenges and opportunities occur when kindergarten teachers use ICT-applications with groups of children?

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2. What role does the use of ICT-applications have in learning activities contributing to children’s engagement with mathematics?

3. What indications of children’s learning of mathematics can be observed through children’s engagement with ICT?

THEORETICAL PERSPECTIVE AND METHODOLOGY

A theoretical ground for the studies will be a sociocultural perspective on learning and development. Learning is viewed as social and situated where individuals, i.e. kindergarten teachers and children, develop their concepts, tools, and actions through collaboration and communication (Rogoff, 1990).

The methodology of this study is developmental research (Freudenthal, 1991). Researchers and kindergarten teachers collaborate in order to develop new forms of mathematical practice in kindergarten.

PLAN FOR PRESENTATION OF THE CONTENT ON THE POSTER

We plan to design a poster presenting the content outlined above. We will also indicate relevant literature, contact information, pictures and invite the visitors to engage with challenges involved in our project. We hope our poster presentation will help us to establish contacts with researchers and research groups sharing a similar research interest. Keywords: Mathematics, ICT, Kindergarten

REFERENCES


