

TEXBOOKS AND LOGBOOKS IN MATHEMATICS

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***Abstract:** This poster presents the main themes found in a literature review about logbooks and their impact on helping students to gain more information from reading mathematical textbooks. Previous research in Year 3 and 4 has shown connections between reading skills and mathematical skill. Logbooks are suggested to overcome these difficulties.*

Keywords: textbooks, logbooks, writing

In Sweden, recent research has shown that a dominant practice in mathematics education involves students working individually in text books (Myndigheten för skolutveckling, 2007; Johansson, 2006).

To gain meaning from textbooks, students need to read and locate specific information. However, not all students possess the skills necessary to do this and struggle to gain anything from their textbooks except the location of the exercises (Weinberg & Wiesner, 2011). According to Johansson's (2006) analysis of Swedish mathematical textbooks, the textbooks lacked important parts and did not provide possibilities to reflect and ask questions on the content of the text or to discuss the role of mathematics in daily life and society.

There is a clear need for students to use and develop the mathematical language used in the textbooks. One way for students to do this is to use logbooks to reflect on what they are reading in textbooks (Borasi & Rose, 1989). However, little research has been done that shows how logbooks can be used to support students' reading of their textbooks.

Consequently, I suggest the need to research the following questions:

- In what ways, can writing in mathematics support the students' understanding of what they read in their textbooks?
- How can writing in logbooks contribute to communicating about mathematics more generally?

READING AND WRITING IN MATHEMATICS

Möllerhed's (2001) study in Year 4-9 showed an interrelation between mathematics word problem solving performance and reading comprehension skills. In particular, vocabulary is considered to be a key factor in reading comprehension (Westlund, 2009). In reading mathematics textbooks this may be especially important because the vocabulary can be difficult for the students to comprehend because there are terms that can be found only in the mathematics. Some of the mathematical words can also have a different meaning in the

natural language, for example odd and volume (Lee, 2006; Myndigheten för skolutveckling, 2007).

In Year 4, mathematics is considered to become much more difficult for Swedish students when many new concepts are introduced and the amount of text in the tasks increases and becomes more advanced (Myndigheten för skolutveckling, 2007). Therefore, I would suggest that the research study be situated in Year four classroom, when most students are about 10 years old.

In the mathematical logbook, students can express and reflect on their feelings, process, knowledge, and beliefs about mathematics (Borasi & Rose, 1989). According to Lundberg and Sterner (2006), the logbooks can also become mathematical dictionaries for the students, where they continuously supplement new words and explanations in order to develop their mathematical language.

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