

WHY MATHEMATICS?

A STUDY OF STUDENTS WHO FAILED TO PASS MATHEMATICS IN COMPUSORY SCHOOL

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This study is concerned with students on an introductory programme where they are supposed to compensate for earlier failure in mathematics in compulsory school. The question is why students have failed particularly in mathematics, and the project is based on a qualitative case study, where students' narratives constitute the basic material.

KEYWORDS

Affect, anxiety, motivation

BACKGROUND

Having worked for several years with students who failed to pass in mathematics in compulsory school I have noticed that some of them, strangely enough, have managed to pass in other subjects where mathematics is used as tool, for example, physics and chemistry. The question then becomes: Why mathematics?

The Swedish compulsory school consists of nine years of schooling. Students who have received a pass in Swedish, English and mathematics in addition to certain other subjects are eligible for a three-year upper secondary school education. For students not eligible, there are five introductory programmes. The idea is that they should lead to either a national programme or to work.

The research in this study is being carried out in a school with an introductory programme where passing in mathematics is crucial for many students. Focus is set on students who have passed other subjects, including physics and chemistry, in compulsory school, but not mathematics. According to official statistics, 8.6 % of all students finishing the Swedish compulsory school in 2011 failed to pass in mathematics. (Skolverket, 2012)

Generally, the frequency of low achievement in mathematics increases during compulsory school age (Magne, 2006), which makes it interesting explore what goes wrong in those years. As Magne (2006) points out, there is not much research on students with low achievement in mathematics. Sfard and Prusak (2005) use the gap between the student's *actual identity* and *designated identity*, respectively to describe motivation for learning. Moving from the actual identity to the designated requires development of engagement, which, in turn, may be hindered by affects like *boredom*. According to Ingram (2009), boredom is under-research in mathematics education. Another focus of research on affect is *anxiety*. According to Nyroos,

Bagger, Silfer and Sjöberg (2012), test anxiety is significantly present as early as in the 3rd grade.

PURPOSE AND RESEARCH QUESTIONS

The aim of my study is to develop an understanding of what could affect students in such a way that passing in mathematics turns out to be impossible.

My research questions are:

- Why do some students fail in specifically mathematics while passing all other school subjects?
- What are the main causes of students' failure?

EMPIRICAL STUDIES AND METHODOLOGY

The study is qualitative and will be carried out through interviews with students from the introductory programme. The interviews are intended to be life history interviews (Goodson, 2001), where the students are invited to tell the story of their school life. Their stories will be analysed to identify what facilitates or not their learning.

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