

Summary

Quoting relevant literature, this thesis supplies a number of scientific assumptions regarding the status of maths in general and the teaching of mathematics in elementary education in particular.

Based on literature and an empirical study it explores how a specific teaching method can favour or disfavour the learning experience of pupils. For this purpose it tries to establish a connection between teaching method and teacher behaviour. However, it must be said in advance that a comparison between different teaching methods will not yield reliable results as to their effect on pupils.

The quality of teaching depends first and foremost on the teacher's preparation and her/his method of introducing the pupils to a subject, i.e. how teaching is adapted to general classroom conditions. As there is a distinct interdependence between teaching method and teacher behaviour this will be discussed in detail, considering also basic and in-service teacher training.

The thesis focuses on constructivistic teaching methods describing them by way of example.

Interpretation of elementary teachers' personal attitudes towards teaching mathematics is made on the basis of the answers given in a questionnaire which proceeds from the assumption that teachers are well aware of the importance of pupils' active and self-dependent acquisition of knowledge to the success of didactics and learning techniques. The question is raised, however, whether the individual teacher's attitude and choice of method are in keeping with this awareness because they will be crucial for the teacher's behaviour. Differences were ascertained between the teacher's answers to questions about her/his personal attitude towards teaching mathematics and the actual classroom conditions for active learning.

In the spring of 2006 a quantitative study involving 175 elementary teachers was conducted in Austria which brought about the following results:

Statistically, the teacher's length of service has no influence on her/his teaching method. Furthermore, though teachers claim to be using teaching methods other than lecturing with the textbook, it is not self-dependent acquisition of knowledge by means of autonomous research of and communication on mathematical problems

they encourage. Answers to the questionnaire suggest that teachers do care about communication during maths lessons in order to enhance understanding and autonomous mathematical thinking. However, it seems more likely that debating, analysing and deducting is something teachers would wish to promote but are largely unable to realise in the course of lessons.