ABSTRACT
This thesis is concerned with a constructivist approach to the introduction of the cosine and sine
theorems at the secondary school. The aim was to develop recommendations for teaching which are
based on the idea of motivating teaching cosine and sine theorems. This approach is based on available
literature and builds on experience from my own teaching of this topic. By motivating teaching, I mean
an approach that is consistent with the principles of constructivism and emphasizes pupils’ active
learning. Current textbooks for secondary schools were analyzed from a mathematical and didactic point
of view. The aim of this analysis is to describe how the topic is elaborated in publications available to
teachers, and to get inspiration for my own approach. My own teaching approach was based on the
theory of generic models and has been implemented in two classes of the secondary grammar school.
Data collected during teaching cosine and sine theorems (video recordings of lessons, field notes from
teaching and pupil artifacts) were analyzed in a qualitative way. The thesis describes the teaching in
detail, with an emphasis on key phases of the discovery of the two theorems. Pupils’ involvement in this
process is closely followed. Where teaching did not work as planned, possible reasons are found and
suggested changes to the plan made. It has been shown that the presented approach to teaching this topic
allowed pupils to discover many pieces of knowledge on their own and provided them with an
opportunity to understand this part of mathematics.