

THE ROLE OF THE TEACHER IN OBJECT-LEVEL AND META-LEVEL LEARNING

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**A research report submitted to the School of Science Education in the Faculty of Science,
University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for
the degree of Masters of Science.**

Johannesburg, 2012

DECLARATION

I declare that this research report is my own, unaided work. It is being submitted for the Degree of Master of Science in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

(Signature of candidate)

27th of July 2012

ACKNOWLEDGEMENTS

First and foremost, I am indebted to my supervisor, Professor Jill Adler, for her very positive qualities and her encouragement, enthusiasm and expertise throughout this study and for so skilfully mediating my ownership of this work. I am most fortunate to have had the honour of working with such an exceptional person.

I wish to thank the principal of the participating school for allowing me access to his school as well as the two teachers concerned for their willingness to be the participants of the study and their eagerness in sharing their thoughts and ideas.

I am indebted to my friend Michelle who patiently spent hours painstakingly proofreading my writing.

I would also like to thank Vingin and Quitant for their willingness to help me with the video recordings of the lessons.

I would like to express my sincerest thanks to my son Peter; the sacrifices made were as much mine as it was his.

ABSTRACT

The National Curriculum statement, or NCS for short, proposes significant shifts in the way that teachers carry out their work. Strategies, such as investigation and collaborative work were promoted as a reform model for effective teaching and learning. Thus, the intention of this research project is to determine how mathematics teachers are implementing the new reform in South Africa.

Based on Sfard's theory of commognitive development, a theoretical framework has been established and the focus specified in the following research questions:

1. How does a teacher mediate instruction during object-level & meta-level learning?
2. What enables and constrains her/his facilitative mediation in the case of Congruency in Grade 9?
3. What can we learn about the practical efficacy of Sfard's discourse theory?

In order to explore the actual teaching process the research project presents a case study constituted from two teaching practices on one topic, Congruency, at a College in Johannesburg. The purpose of observing and interviewing two teachers on the same lessons is to get a greater variety of conversation on object-level and meta-level learning. At the same time analysing their teaching process in-depth creates an opportunity to have different possibilities of mediating collaborative learning. The study addresses the three research questions through two related activities – non-participant observation and semi-structural interviews with teachers (in order to provide an opportunity for teachers to express their opinion).

Two main findings can be summarized: Firstly, the way the teacher manages instruction originates from her/his teaching style. The data analysis clearly confirms that mediation of the two teachers on the topic Congruency does not differ according object-level and meta-level learning, but according to the teachers. The second finding is related with Sfard's theoretical perspective: on the one hand the Department recommends investigative activities, whilst, on the other hand, Sfards' theory states that reinvention by the learner is highly unlikely. Therefore the practical efficacy of Sfard's theory is that in meta-level learning investigative activities are not appropriate and the role of the teacher should be dominant, not necessarily as facilitator.

This research study is an empirical proof of the validity of Sfard's theory and unspecified requirements of the Department of Education.

KEYWORDS: object-level learning, meta-level learning, Congruency, Commognitive theory.

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