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Review of Doctoral Thesis

Author: Silvia Sbaragli
Title: Teachers' Convictions on Mathematical Infinity
Reviewer: PaedDr. Soňa Čeretková, PhD.

1. General description

The thesis consists of 4 chapters, the preface and the bibliography. The thesis is written on 178 pages. The structure of thesis conforms to principles and requests to the structure of scientific thesis.

The author has studied and used impressive amount of bibliography sources performed in her thesis. It is the evidence of her deep knowledge and excellent orientation in the problem discussed in the thesis.

The word processing of the thesis is very good. I appreciate clear linguistics expressions and intelligible stylistics descriptions in every chapter of the thesis. The using of different fonts and structure of the text is proper and helps the reader to better orientation in the text.

The thesis fulfills the formal requests on excellent level.

2. The topicality of the thesis

From the point of view of the term of *infinity* I only have to agree with author, as she wrote in the preface of her thesis: "*the topic represented and still represents a fascinating subject matter...*". The author describes the basic critical historical approach to infinity in the first chapter of her thesis. The description and the interpretation of historical points of conception of infinity performed authors' sense of direction in this field of her knowledge.

Theory of mathematics education as the scientific discipline deals with many exciting topics today. The activity of every research team is not focused only to its' subject of research but the common thread of the research is to develop better understanding of mathematics knowledge at all levels of mathematics education: elementary, primary, secondary, high school and university level, mathematics teachers training (see e.g. ICME-10 materials).

Teachers in practice are very important source of research work and helpful objects of research especially those who are open to new knowledge and prepared to new experience with them and/or their students. The focus to the teachers and to their knowledge and convictions on certain mathematics topic or subject or term is on the top of research of several research teams in didactics of mathematics or theory of mathematics education all over the world.

The author clearly describes her very good orientation and wide knowledge of didactics of mathematics in the second chapter of her thesis.

The topic of thesis is current and relevant in the context of up-to-date research in theory of mathematics education.

3. Aims and methods of the thesis

The aims and methods of the thesis are organic parts of chapters three and four.

The chapter **3 Primary school teachers' convictions on mathematical infinity** is the core of the thesis. The aims, background of the research problem, hypothesis and research methodology are clearly described in this chapter, as so the results of research and its' interpretations and conclusions.

The analysis of answers of distributed questionnaire to 16 teachers reflects, in my opinion, the wide and common spectrum of convictions of infinity in minds not only of teachers in practice, but in the minds of students - future teachers of mathematics. It is my personal experience during performing the courses of elementary arithmetic.

The chapter 3 is very nice example of advanced research work in theory of mathematics education.

The chapter **4 Present and future research** performs authors' deep involving in the problems presented in the previous chapter. Its' parts are separated examples of rich research ideas and results (parts 4.1 – 4.4). Part **4.5 A future fundamental aspect: different representations of the point in mathematics** describes inspire activities with students or teachers in the present tendency of research aims, ideas and methods.

The thesis is inspired from both of the theoretical and methodological point of view. Aims and methods are clearly described, author represents the ideas and knowledge with deep theoretical background. The aims were fulfilled, methods of research work are appropriate to the aims and hypothesis formulated in the thesis.

4. Results of thesis and their benefit

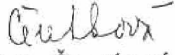
From what was said above, it is clear that Ms. Silvia Sbaragli is able to organize and realize the significant research work in theory of mathematics education.

The theoretical background, both mathematical and didactical, and the active research work performed in the thesis of is benefit to existing materials and ideas in the scientific research.

5. Conclusion

In my opinion, the thesis by Ms. Silvia Sbaragli fulfils all the conditions for gaining the PhD. degree in Theory of Mathematics Education; therefore it is recommended.

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