

## Opponent Review on the Doctoral Dissertation

of Sántha-Malomsoki Ágnes on „A MIXED-METHODS STUDY ON VERBAL ABILITIES AND COGNITIVE FLEXIBILITY OF HUNGARIAN LEARNERS IN CLIL AND GENERAL LANGUAGEPROGRAMMES”

Sántha-Malomsoki Ágnes undertakes the challenge to integrate the linguistic, educational, and psychological aspects of Content and Language Integrated Learning programme (CLIL) using a Mixed Methods design. This task requires both scientific knowledge and practical skills of the different fields along with creativity. The Author's aim was to reveal specific patterns of bilingual language and cognitive development related to second language learning among Hungarian elementary students. This highly complex goal has been achieved by the finely tuned research design and result analysis. The present study is a novelty in bilingual research in several ways that I will cover in the following paragraphs. The present dissertation is also timely for the theoretical framework of second language teaching in the 21<sup>st</sup> century, further, it fits among research in neuroeducation. In the review, first I am going to reflect on the structure and the content of the dissertation. Since I also acted as an opponent for Sántha-Malomsoki Ágnes' Doctoral dissertation at the preliminary examination stage, I will also reflect on the development of the final dissertation.

The Author provides a comprehensive theoretical framework for her research. The theory is divided into five sections, covering the introduction of CLIL methodology and L2 teaching in Hungary, the models and components of the executive functions, introducing bilingual mental lexicon and research which compare mono- and bilingualism, and closing the chapter with her eight hypotheses. After the clear presentation of the Mixed Methods used in the present research (Chapter II), she provides the results in four sections under Chapter III, according to the tests used in the research. The first three sections cover the results of the quantitative data analysis while the fourth one describes the qualitative analysis. She describes the eight parameters of the structured interviews after the discussion of the test results in Chapter IV. The Author uses adequate quantity and quality of tables and figures to demonstrate the results. In the Chapter of conclusions (Chapter V) she provides multi-faceted explanations for the results.

My remarks and recommendations concerning formal elements:

The Author uses adequate language and the dissertation suits for the criteria of a PhD dissertation both in form and style. She has taken most of my recommendations concerning the structural and formal correction: 1) She specified the subtitle 1.2 as *Bilingualism and bilingual education*, which covers adequately the topic; 2) she corrected the usage of the abbreviations in those cases where the full term did not precede the abbreviated form in the preliminary phase; and 3) now indicates the languages in the tables of verbal fluency tests in the Appendix as it is indicated in the Results section. Although the Author agreed to review the dissertation to correct the listed typos, most of the ones indicated in the preliminary opponent review have remained uncorrected in the present scientific study.

As for the structure of the theoretical framework, I still suggest some changes on 1.5. *Research on bilingualism*. The title is still too vague, therefore, I recommend providing the specification the given research covers, namely, *Research comparing mono- and bilingualism*.

The Author provides ample literature for the theory in Chapter I, however, there are a few general statements without supported literature which create minor hiatus in the academic form (for example, in pages 50 and 52).

As for the content, the implemented Mixed Methods is a carefully constructed design, making the study a high-standard, comprehensive research. The comprehensive and careful selection of the quantitative and qualitative measures is unique in the Hungarian literature of the field and the initiation of an alternative scoring system to distinguish clusters is a novelty.

Results are clearly presented both in the tables and in the text. The Author's explanations and arguments in the discussion are clear and logical, also compared to previous research results.

Although I found the literature sufficient even in the previous version of the dissertation, I recommended Feuerstein's constructs to take into consideration in relation to the theory of scaffolding and testing in language programmes. The first one I mentioned was the model of Mediated Learning Experience (MLE), also used as a method of scaffolding. The other construct, namely, Feuerstein's Cognitive Map is designed for the analysis of the interaction between the task and the person who deals with it. I welcome the Author's response to my recommendation that she considers the future extension of the present study with the involvement of these constructs.

As for the Phonemic fluency tests, I mentioned another viewpoint to take into consideration when discussing the results. Namely, in case of retrieving words for the letters in the F-A-S verbal fluency test in English, not only the Hungarian vocabulary compete with the English one – as it is noted by the Author correctly – but English phonemic counterparts as well. For example, words starting by "Ph" in case of letter F or words starting with "Ce" or "ci/cy" in case of letter S might also be activated and need to be neglected by the student. Seeing letter 'A' needs to activate words with the short and long vowel sounds. Contrary, word activation in Hungarian do not imply such problems. It may also explain the results for the English word activation, that the CLIL group performed significantly better, since they are more experienced in suppressing competing words and more fluent in switching. Although the Author intended to add this viewpoint into the final dissertation, I noticed with regret that this intent was not realized in it.

However, the novel quality analysis of the two groups' vocabulary structure (examining the proportion of unique words, genre, and word frequency) raises the standards of the dissertation.

The Author approached her research topic with a holistic view and this study provides valuable information for both educators and psycholinguists, for both practitioners and researchers.

The present research is an answer to some of the problematic questions of L2 teaching in Hungarian schools and L2 teachers should be informed by these results. The dissertation may inspire more schools to initiate CLIL programme.

I propose the dissertation for public debate and the candidate for the title of PhD.

Budapest, 20th August 2021

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