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Language and literacy profiles: A mixture modeling approach

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Abstract

Mixture modeling was used to examined the: (a) heterogeneity and prevalence of the language and literacy profiles among 521 first grade students (Malaysian equivalent of Primary 1) and (b) predictors that optimize the classification of language and literacy profiles. Based on the Simple View of Reading as a theoretical framework, five language and literacy profiles were identified. These were students with: a) the weakest performance on average in literacy but slightly higher language skills, b) weak performance in both language and literacy, c) average performance in language and literacy, d) above average performance on language and literacy, and e) the strongest performance in language and literacy. Unique predictors of class membership differentiation for all groups were phonological awareness, teacher judgment on academic achievement, and socioeconomic status.

Keywords: mixture modelling; latent profiles; language; literacy; first grade

1. Introduction

Literacy (dis)ability profiles are heterogeneous (e.g., [1, 5, 41]. Thus, classification work is vital to general and special education [34] for advancing theory and practice in literacy development and (dis)abilities, instruction, and intervention. Many classification studies have examined the heterogeneity of literacy profiles among elementary-aged children [5, 7, 9, 15, 18, 28] but few were in the English orthography [5, 7, 9, 15].

Literacy constitutes a constellation of componential skills [33] such as word recognition, spelling, reading fluency, and reading comprehension. These skills are foundational pillars of literacy outcomes [24, 25] and they represent markers for identifying reading disability [10]. To date, the constructs examined have been limited to word reading and comprehension (e.g., [9, 41]).

The Simple View of Reading (SVR; [1, 14]), which illuminates core components of reading, namely decoding (D) and linguistic comprehension (LC), is useful for conceptualizing the strengths and weaknesses of D and LC for instructional and intervention efforts [38]. Evidence suggests that dissociations between D and LC occur among the poorest readers but not the strongest and typical readers [6, 14]. Poor reading has been reported to occur on a continuum (i.e., poor word recognition but adequate listening comprehension; poor word recognition and listening

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