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Review

Accuracy of teachers' judgments of students' cognitive abilities: A meta-analysis

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ABSTRACT

This paper presents a meta-analysis of the accuracy of teachers' judgments of students' cognitive abilities. The array of cognitive abilities includes intelligence, giftedness, other cognitive abilities, and creativity. The integration of 106 effect sizes from 33 studies with a meta-analytical multilevel approach led to a mean judgment accuracy of cognitive abilities of $r = 0.43$. Moderation analyses revealed moderate to large effects for intelligence: $r = 0.50$, other cognitive abilities: $r = 0.42$, giftedness: $r = 0.36$, and creativity: $r = 0.34$. Lower judgment accuracy was shown for preselected student samples and for judgments without eligible frames of reference. We discuss an academic achievement bias as selected studies revealed higher correlations between judgments of intelligence and academic achievement measures ($r = 0.61$) than between judgments of intelligence and measures of intelligence.

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Contents

1. Introduction	86
2. Theoretical background	87
2.1. Cognitive abilities	87
2.1.1. Intelligence	87
2.1.2. Giftedness	88
2.1.3. Other cognitive abilities	88
2.1.4. Creativity	88
2.2. A model of teachers' judgment accuracy	89
2.2.1. Teacher characteristics	89
2.2.2. Test characteristics	90
2.2.3. Judgment characteristics	90
2.2.4. Student characteristics	90
2.3. Teacher dependency	91
3. The present study	91
4. Method	91
4.1. Information retrieval	91
4.2. Inclusion criteria and exclusion criteria	92

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4.3.	Study selection	92
4.4.	Data coding	92
4.4.1.	Study-specific characteristics	92
4.4.2.	Assessment objectives	93
4.4.3.	Judgment characteristics	93
4.4.4.	Test characteristics	93
4.4.5.	Student characteristics	94
4.4.6.	Methodological characteristics	94
4.5.	Analyses	94
5.	Results	95
5.1.	Summarization of effect sizes	95
5.2.	Moderator analyses	95
5.2.1.	Judgment objectives	95
5.2.2.	Publication year	95
5.2.3.	Region	95
5.2.4.	Study type	95
5.2.5.	Judgment scale	95
5.2.6.	Referenced judgment	97
5.2.7.	Test standardization	97
5.2.8.	Test reliability	97
5.2.9.	Schooling level	98
5.2.10.	Selectivity	98
5.2.11.	Academic achievement	98
5.2.12.	Teacher dependency	98
6.	Discussion	98
6.1.	Practical implications	100
6.2.	Limitations	100
6.3.	Directions for future research	100
6.4.	Conclusion	101
	Acknowledgements	101
	Appendix	101
	References	101

1. Introduction

Teachers' judgments play an important role for the personal and academic development of their students. They are often the primary source of information on students' educational progress. As such, they are responsible for formal aspects of education such as students' report cards, diplomas, decisions on course placement, and decisions on school tracking. In light of these formal aspects, a valid assessment of students' academic achievement is of high importance and has been studied extensively. Most studies containing quantitative data on teacher judgment validity offer estimations of judgment accuracy by the comparison between a critical student characteristic and its judgment by teachers. The standard measure of comparison is the correlation between criterion measures and judgment measures. Judgment accuracy for academic achievement has been systematically integrated in two meta-analyses. Hoge and Coladarsi (1989) identified a median judgment accuracy over 16 studies of $r = 0.66$ and Südkamp, Kaiser, and Möller (2012), in a more recent meta-analysis, found similar results over 75 studies with a mean judgment accuracy of $r = 0.63$. These effect sizes are considered fairly high, yet they imply that teachers' judgments merely explain about 40% of the variance in student achievement.

The impact of teachers' judgments exceeds their grading and producing report cards. What teachers think about their students translates into their instruction, communication, and task development. Teachers' conceptions of what their students' bring to the table of learning contribute strongly to what happens in the class and how teachers interact with their students. Research on teachers' judgments should, thus, not be confined to judgments of academic achievement (Alvidrez & Weinstein, 1999). Teachers use their impressions of their students to create adequate learning environments for their classes and each student in it. Therefore, teachers need to have the competencies to retrieve viable information on their students and apply this information in order to provide for adequate tasks (e.g., McElvany et al., 2009) and respond to their students' work with constructive feedback (e.g., Hattie & Timperley, 2007).

Especially classroom teachers spend time with their students for many hours every school day. Because of this broad exposure, teachers are often expected to be able to provide differential diagnostic information on their students that go far beyond the measure of their performance on academic tasks in specific domains (Spinath, 2005). Consequently, teachers' judgments are widely used selection or screening criteria for either giftedness identification (e.g., Pfeiffer & Jarosewich, 2007) or the identification of special education needs in reference to learning disabilities in specific domains (see Fischbach, Schuchardt, et al., 2013).

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