



Attitude toward school does not predict academic achievement



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ABSTRACT

This study, by analyzing the PISA 2003, 2009, and 2012 datasets, finds virtually no direct relationships between students' general attitude toward school and their academic achievement in reading and mathematics. The lack of substantial relation between attitude and achievement was found for the majority of 64 countries who participated in the PISA 2012 survey. The finding was also consistent across subgroups of students, by gender, family SES, countries' OECD membership, and variations in the within-country modal grades, as well as for students at the lower and higher levels of attitude or achievement. A moderately strong relationship between attitude and achievement was shown only among students at the highest end of the SES spectrum and in a handful of countries (i.e., Qatar, Iceland, and Australia). Structural equation modeling shows that attitude toward school is at best indirectly related to achievement but the strength of that indirect link is rather small as well.

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1. Introduction

Educational psychologists' effort to identify strong predictors of student achievement has been expanded to large-scale, cross-national comparisons in recent years, in particular, via international programs such as the Programme of International Student Achievement (PISA) of the Organization for Economic Co-operation and Development (OECD) or the Trends in International Mathematics and Science Study (TIMSS) of the International Association for the Evaluation of Educational Achievement (IEA). International data collected from such programs have been instrumental in demonstrating which variables have cross-national relevance and applicability as predictors of student achievement. For example, self-efficacy in mathematics was the best predictor of mathematics in the PISA 2003 data (Lee, 2009; Lee & Stankov, 2013). Similarly, enjoyment in reading had strong cross-national predictability of reading achievement in the PISA 2009 data (Lee, 2014). Meanwhile, there has been several "odd country-level findings" that are "peculiar but consistent" (Kyllonen & Bertling, 2014, p.278) in the large-scale international data. Among them, Lee (2014) reported that students in most countries/education systems who performed well in the PISA reading and mathematics tests, such as in Shanghai-China, South Korea, Hong Kong-China, Singapore, and Japan as well as Western countries like Finland and the Netherlands, do not have positive attitudes toward school; their country-level scores were lower than the OECD country mean. The PISA 2003 data show that as many as 48% of Japanese students and 34% of students in Hong Kong-China and in Korea disagreed to the statements of "school has taught me things

which could be useful in a job" and "school helped give me confidence to make decisions" (OECD, 2004).

In light of these seemingly paradoxical findings in recent large-scale data, the present study is designed to examine direct and indirect links between students' general attitude toward school and academic achievement and to compare their relative strength in the context of other variables that have been known as strong predictors of achievement (i.e., self-efficacy in mathematics and enjoyment in reading). Surprisingly, research findings on attitude-achievement relations have been inconclusive; there has not been sufficient evidence to answer straightforward questions like: *Does attitude toward school actually predict academic achievement? Does it have links to other educationally relevant variables? Can attitude toward school be an educationally relevant construct if it does not directly predict students' academic achievement?*

The present study employs an operational definition of attitude toward school that is articulated in the PISA framework (see OECD, 2004, 2010). It emphasizes the cognitive components of attitude and is defined as students' thinking about "what they had learned at school in relation to how the school had prepared them for adult life, given them confidence to make decisions, taught them things that could be useful in their job or been a waste of time" (OECD, 2004, p.115). In short, it can be summarized as students' perceptions about usefulness of schooling. Attitudes in general are formulated by "beliefs (the cognitive component) and often attract strong feelings (the emotional component) which may lead to particular behavioral intents" (Oppenheim, 1992, p. 175). Other researchers (McCoach & Siegle, 2003; Suldo, Shaffer, & Shaunessy, 2008) focus on the emotional components of attitudes toward school, by defining it as "interest in and affect toward school" (McCoach & Siegle, 2003, pp.417). The PISA framework as well as others (e.g., Majoribanks, 1992; Lee & Stankov, 2016; Stankov & Lee, 2008) views cognitive components of

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attitude as more predictive of and pertinent to human behaviors including academic achievement. Students' attitude toward school can also be derived from students' schooling outcomes and their unique interactions with peers and teachers or from learning experiences of a particular academic subject area or through extra-curricular activities. In the present study, attitude toward school is measured as students' overall *perception* about their school experiences and potential outcomes of schooling. For all scale-level variables employed in this study the PISA's official scale labels are maintained so that those familiar with the PISA data can easily identify the scales/variables and scale items across different years of PISA (see Annex A of OECD, 2004, pp.305–338; OECD, 2010, pp. 105–132; and OECD, 2014, pp. 306–342 for the PISA scale items).

2. Attitude toward school and academic achievement

For most young children and adolescents, much of socialization and learning takes place in school. There they experience a sense of achievement, often find role models, learn about rules, rewards and values, and develop attitudes toward school (cf. Cheng & Chan, 2003). Since the 1950s and 1960s, many studies have explored the nature of the relationships between pupils' attitude toward school and their scholastic development. However, the more studies were conducted, the more inconsistent and contradictory the findings turned out to be (Majoribanks, 1978). Early studies by Jackson and Getzels (1959); Jackson and Lahaderne (1967) sparked a great deal of discussions by claiming nearly zero relationship between attitude toward school and achievement. In their sample of sixth-graders (Jackson & Lahaderne, 1967), attitude toward school was measured by the Michigan Student Questionnaire (MSQ) and Student Opinion Poll (SOP), and several measures were employed to assess scholastic achievement including IQ, teacher grades in reading, language, arithmetic, and science, and the Stanford Achievement Test in reading, language, and arithmetic. These two sets of variables (attitude and achievement) showed correlations ranging from $r = -0.08$ (with the IQ among boys) to $r = 0.19$ (with science grades among girls). In particular, the correlations hovered close to zero when the MSQ was used (Jackson & Lahaderne, 1967). The authors found that there was virtually no relationship between attitude and achievement for boys and girls across different cognitive/achievement measures, and concluded that the expectation of a positive relationship between school success and attitude toward school is only "bound together by logic" but not necessarily "by fact" (Jackson & Lahaderne, 1967, p.15). There were some later studies reaching similar conclusions (e.g., Fennema & Sherman, 1977), but subsequent research conducted in the 1960s to 1980s has seriously challenged this null finding (e.g., Brodie, 1964; Coleman et al., 1966; Aiken, 1976, Majoribanks, 1987).

In the 2000s, studies showed a more univocal proposition, by empirically demonstrating the positive relationship between attitude and achievement (e.g., Chang & Le, 2005; Cheng & Chan, 2003; Dolan, 1983; Majoribanks, 1992; McCoach & Siegle, 2003; Suldo et al., 2008). For instance, in Suldo et al. (2008) a positive association between attitude toward school and achievement was found across low- ($n = 34$), average- ($n = 161$), and high- ($n = 118$) achieving students. Based on 151 Hong Kong middle school students, Cheng and Chan (2003) reported a moderate but positive correlation ($r = 0.25$) with the combined grades of language and mathematics. In Majoribanks's (1992) study, the correlations were all in the expected positive direction ($N = 980$), and the cognitive dimension of attitude toward school had a unique relationship with reading achievement when the covariance between ability and achievement were taken into account. McCoach and Siegle (2003) also showed that high-achieving students had more positive attitude toward school, with a medium Cohen's effect size of $d = 0.67$ ($N = 176$). By early 2000s studies were generally in support of the "consistent indication" (McCoach & Siegle, 2003, p.417) that students who do well in school have positive attitude toward school.

Furthermore, when the expected, positive relation was not found, researchers investigated the reasons for the apparent lack of relation and how it might have been missed or hidden in the analysis. Majoribanks (1978) and Majoribanks (1992) emphasize that differential attitude-achievement relations may exist by students' ethnicity and intelligence levels. Aiken and Dreger (1961), after finding a significant attitude-achievement relationship for females but not males, underlined gender as an important factor in predicting achievement by attitude. Levin (1976) looked into family socio-economic status and proposed that there may be further benefits from having a positive attitude toward school for economically disadvantaged students. It was also proposed that inclusion of personality and environmental factors (Majoribanks, 1978) or examination at the extreme level of ability and attitude (e.g., Jackson & Getzels, 1959) may bring a more complete understanding of attitude-achievement relations.

In the last 15 years or so, attitude toward school has receded as the main focus of empirical studies and is often seen as one of many predictors or contextual variables of student achievement (e.g., Lee & Stankov, 2013). Meanwhile, the international assessment communities recognize that attitude toward school is an important variable that contributes to building "a broader profile" of a student's learning outcomes and habits (OECD, 2004, p.110) as well as shaping post-school career pathways. From an intervention point of view, attitude toward school is seen as more responsive to change via prevention and remediation as opposed to static types of student characteristics such as family background (cf. Lee & Shute, 2010). For educators and teachers, concern for students' attitude toward school is "pragmatically justified" (Brodie, 1964, p.375), as it is directly related to a host of immediate issues to resolve in the school, such as "dropouts, grouping procedures, and planning for the gifted child" (Jackson & Getzels, 1959, p. 295).

In sum, there has been paucity of recent research that directly investigated the attitude-achievement relations. The present study aims to examine: (a) what is the relationship (expressed by strength and direction) between students' general attitude toward school and academic achievement, especially in large-scale international data; (b) whether attitude toward school has direct or indirect relationships to academic achievement; (c) how the effect of attitude toward school on academic achievement compares to the effects of other variables that are known to be strong predictors in previous large-scale assessments (i.e., self-efficacy in mathematics and enjoyment in reading, cf., Ainley & Ainley, 2011; Lee, 2009, 2014; Stankov, 2013; OECD, 2004, 2010); and finally (d) whether the attitude-achievement relations are consistent in various subgroups of students, for example, by country, gender, and families' socio-economic status (SES).

3. Measurement of attitude toward school

It is worthwhile to note that there has been a wide range of variation in how attitude toward school is defined from one study to another (e.g., Dolan, 1983; Majoribanks, 1992; McCoach & Siegle, 2003; Suldo et al., 2008). Most noticeably, different aspects of student life in school, which are not necessarily about students' perceptions about school itself, tended to be included as part of the 'attitude toward school' measures. Examples are abundant, such as students' academic self-concept, motivation, and achievement orientation (e.g., Dolan, 1983; Majoribanks, 1992), teacher-student relationships and teacher support (Masters & Hyde, 1984; Roshal, Frieze, & Wood, 1971), liking for a particular class and school climate (Majoribanks, 1992), and peer relations, perceived liking for subject matter and instructional strategies including playing games (Masters & Hyde, 1984). In contrast, the scale used to measure attitude toward school in the present study is solely based on students' perceptions about schooling itself and not about other factors that could possibly influence attitude toward school such as feelings toward particular teachers, peer groups in general, or learning of a specific content area.

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