



Integrating teacher education effectiveness research into educational effectiveness models



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ABSTRACT

The purpose of this article is to review and to connect research about teacher education effectiveness and school effectiveness to arrive at an integrative conceptualization that has the potential of improving empirical research in both fields. Teacher education effectiveness addresses effects of teacher education on outcomes such as teacher knowledge, this knowledge becomes the predictor in teacher effectiveness research with instructional quality and student achievement as outcomes. The two research orientations become united in path-analytic studies. A fuller incorporation leads to an extended educational effectiveness model that enriches a systemic interpretation of key levers of educational effectiveness and opens up black boxes at the system and the classroom level. In such a comprehensive model, teacher policies can be regarded an alternative for educational improvement strategies like school curriculum policies, accountability and evaluation or governance and management. At the same time insights from educational effectiveness research at large suggest inclusion of additional variables in teacher education and teacher effectiveness research, particularly on the institutional level.

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1. Introduction

1.1. Purpose

The purpose of this article is to connect research about teacher education effectiveness and school effectiveness, in order to arrive at an integrative conceptualization that has the potential of improving empirical research in both fields. It builds on scholarly work in the fields of *research on teaching* (e.g., Brouwer & Korthagen, 2005; Cochran & Fries, 2005; Darling-Hammond, Wie, & Andree, 2010), *international comparative assessment studies* (e.g., Blömeke, Suhl, Kaiser, & Döhrmann, 2012), *school effectiveness research* (e.g., Creemers, 1994; Scheerens, 1992) and *education production function research* (e.g., Blömeke, 2004; Cochran-Smith & Zeichner, 2005; Darling-Hammond, 2000; Hanushek, 1997; Wayne & Youngs, 2003).

It is the ambition of the authors to show how integration in an overall conceptual model of educational effectiveness would enrich each of the more specialized research strands, by bringing in both additional focus as well as a broadened scope and, thus, clarifying the causal relation of teacher education, teacher characteristics, teaching quality, the role of the school

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and the classroom contexts and different types of outcomes. This integration will be approached by considering theory and research developments from two sides:

- a) developments in the conceptual modeling and empirical research approaches in educational effectiveness at large
- b) developments specifically in the study of teacher education effectiveness and teacher effectiveness

1.2. Methods

To address the question of closer alignment and integration of the two fields of study, this article considers both conceptual models and operational research practices. Conceptual modelling has a certain predominance, since it is seen as the appropriate level of abstraction to identify and improve connectivity between the two fields.

The methodology that was applied was systematic study of the relevant research literature, as well as further reflection and conceptual conjecture based upon relevant earlier empirical research carried out by the authors (Blömeke, 2004; Blömeke & Delaney, 2012; Scheerens, 2014; Scheerens, Luyten, Van den Berg, & Glas, 2015). More specifically the present manuscript was based on the following review studies: Scheerens (2012) described systematic literature search and meta-analyses of 26 school leadership effect studies, of which 15 had used indirect effect models. Scheerens, Witziers, and Steen (2013) was based on a systematic search and meta-analysis of 155 school effectiveness and 177 instructional effectiveness studies. Scheerens (2014) was based on a systematic search, yielding 23 educational effect studies that had used indirect effect models. Blömeke (2004) did the first comprehensive review of teacher education effectiveness studies that included not only studies in English-speaking countries but also German-speaking countries with overall 92 studies. Another systematic review followed in 2012 that included virtually all studies known that had applied standardized test instruments of mathematics teachers' knowledge as core indicator of teacher education effectiveness in more than one country (Blömeke & Delaney, 2012).

1.3. Research questions

The following research questions are addressed:

- 1) What are correspondences and differences in the way teaching and learning are modelled and empirically studied in school effectiveness research and teacher education effectiveness research?
- 2) What is the position of teacher education as one among several system level levers of educational effectiveness and educational improvement?
- 3) How can indirect effect models of teacher education on student achievement be specified and what are illustrative results of empirical research? What are the perspectives of integrating these models in an overall conceptual model of educational effectiveness?
- 4) What are common challenges for teacher education effectiveness research and school effectiveness research?

1.4. Overview of contents

After a section in which the basic conceptual model underlying this paper is explained and key terminology is defined, the article addresses the research questions pointed out above successively in subsequent paragraphs. The first research question is addressed in section 1, the second research question is addressed in section 2, research question 3 is addressed in section 3, while research question 4 is addressed in sub-sections 3.5 and 3.6 as well as in section 4, the discussion section. The answers to the research question are reviewed in the discussion section as well.

2. A basic model and key terminology¹

In this section we introduce educational effectiveness research as an integration of school effectiveness research and teacher education effectiveness research and by looking at the educational system as a set of hierarchical layers.

In the most general sense *school effectiveness* refers to the level of goal attainment of a school. Although average achievement scores in core subjects, established at the end of a fixed program, are the most probable effects of a school, alternative criteria like the responsiveness of the school to the community and the job satisfaction of the teachers may also be considered. Assessment of school effects occurs in various types of applied contexts, like the evaluation of school improvement programs or comparing schools for accountability purposes, by governments, municipalities or individual schools.

¹ Appendix 1 also provides a glossary with abbreviations to facilitate the reading.

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