



# Equality and quality in education. A comparative study of 19 countries



Fabian T. Pfeffer

University of Michigan, 426 Thompson Street, 3240 Institute for Social Research, Ann Arbor, MI 48106, United States

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## ABSTRACT

This contribution assesses the performance of national education systems along two important dimensions: The degree to which they help individuals develop capabilities necessary for their successful social integration (educational quality) and the degree to which they confer equal opportunities for social advancement (educational equality). It advances a new conceptualization to measure quality and equality in education and then uses it to study the relationship between institutional differentiation and these outcomes. It relies on data on final educational credentials and literacy among adults that circumvent some of the under-appreciated conceptual challenges entailed in the widespread analysis of international student assessment data.

The analyses reveal a positive relationship between educational quality and equality and show that education systems with a lower degree of institutional differentiation not only provide more educational equality but are also marked by higher levels of educational quality. While the latter association is partly driven by other institutional and macro-structural factors, I demonstrate that the higher levels of educational equality in less differentiated education systems do not entail an often-assumed trade-off for lower quality.

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## 1. Introduction

The education system in modern society is supposed to fulfill two largely uncontested functions: First, equip individuals with knowledge that allows them to take part in social, economic, and political life (Durkheim, 1922). Second, confer access to valuable credentials independent of individuals' socio-economic background, in other words, provide opportunities for social mobility (Coleman, 1968; Labaree, 1997). If we accept these two functions as fundamental elements of modern education systems, we should judge their performance according to the *quality* of knowledge they produce and the degree to which they provide *equality* of educational opportunities (in the remainder simply referred to as quality and equality). Both of these dimensions of educational outcomes are central and long-standing concerns of public policy and social science (Hallinan, 1988; Blossfeld and Shavit, 1993a).

This contribution asks whether countries can achieve both educational equality and educational quality *simultaneously* or whether certain institutional features of education systems may entail a trade-off between these two aims. In particular, I focus on the role of institutional differentiation – that is, the nature and timing of assigning students to different tracks or secondary schools (Hopper, 1968; Allmendinger, 1989) – as a potential joint determinant of equality and quality in education. For a fruitful sociological approach to these questions, I propose different conceptualizations and measures of educational outcomes than those used in a growing field of comparative research. Although many contributions in this field

E-mail address: [fpfeffer@umich.edu](mailto:fpfeffer@umich.edu)

share the theoretical motivation laid out here, most of them revert to a specific type of readily available and increasingly popular data, namely international student assessments, often with very limited appreciation of the conceptual limitations and assumptions these data entail.

## 2. An equality–quality tradeoff in education?

A fundamental question in sociological research on education and a primary concern of educational policy-making is whether socio-economic equality in educational opportunities can be increased without lowering the quality of education. I label this the potential equality–quality tradeoff in education.

The tension between the aims of equality and quality is nowhere more crystallized than in the controversy about the effects of institutional differentiation. The U.S. literature on institutional differentiation – here, in the form of tracking and ability grouping – serves as a case in point (Oakes, 1985; Barr and Dreeben, 1983; Hallinan, 1994). Despite formidable empirical evidence on the negative effects of tracking on equality (Gamoran, 1987; Gamoran and Mare, 1989), defendants of differentiation argue for its positive effects based on the following mechanism: The sorting of students into different groups is supposed to increase classroom homogeneity with respect to student ability and learning potential. More homogeneous classrooms should allow more targeted instruction, which in turn is assumed to benefit students at all ability levels (Figlio and Page, 2002; Duflo et al., 2011). In this view, the abolishment or reduction of differentiation is seen as jeopardizing overall educational quality. Another version of this perspective goes beyond a concern for overall quality and specifically cautions against the dangers of decreasing quality at the top by exposing the highest achieving students to classrooms or schools with low achieving students.

Institutional differentiation has long been understood as the most central feature of education systems (Hopper, 1968). The great international variation in the nature and extent of differentiation makes this institutional characteristic a prime candidate for explaining cross-national differences in educational outcomes (Kerckhoff, 1995, 2001).

## 3. Comparative evidence: Shortcomings and alternatives

### 3.1. Existing comparative research based on student assessment data

For the longest time, reliable empirical estimates of international differences in educational outcomes and, more so, their explanation were largely elusive (Breen and Jonsson, 2005). Large-scale, coordinated surveys that assess student outcomes in many countries, such as the International Mathematics and Science Study (TIMSS) or the Program for International Student Assessment (PISA), set out to provide a wealth of new data to rectify this situation. Since then, a number of contributions have drawn on these data to assess the association between educational equality and quality and the role of institutional differentiation for both of these outcomes (for a review see Van de Werfhorst and Mijs, 2010).

Based on both TIMSS and PISA data, researchers have documented no or no consistent association between educational equality and quality (Woessmann, 2008; Schütz et al., 2008; Hanushek and Woessmann, 2006; Hermann and Horn, 2011). Furthermore, research has repeatedly shown that systems with more intense and early differentiation are marked by higher levels of socio-economic inequality in student test scores, that is, lower equality (Ammermüller, 2005; Marks, 2005; Marks et al., 2006; Hanushek and Woessmann, 2006; Brunello and Checchi, 2007; Horn, 2009; Schütz et al., 2008; Woessmann, 2009). In contrast, the relationship between institutional differentiation and average test scores is much weaker. Researchers have found either no association (Hanushek and Woessmann, 2006; Robert, 2010) or a small positive association that is sensitive to different model specifications (Horn, 2009). In short, the current literature based on student achievement data suggests that institutional differentiation is detrimental for educational equality and largely inconsequential for educational quality – a conclusion in line with the observation of a non-existent tradeoff between educational equality and quality.

### 3.2. Limitations of international student assessment data

Existing comparative studies based on student assessments thus yield rather consistent results. But are their findings robust to a different conceptualization and measurement approach? The alternative approach proposed here relies on measures of final competencies and credentials among adults to address the central sociological questions at stake in a more direct way and to circumvent some of the central limitations of student assessment data in answering those questions.

Most international achievement tests have been designed for the explicit purpose of measuring broad student competencies rather than the mastery of specific curricular content. For instance, PISA aims to provide measures of students' ability to "interactively use language, symbols, and text [to] function well in society [my emphasis]" (OECD, 2005); clearly a measure sociologist should be interested in (Kingston et al., 2003). However, measuring these competencies and their distribution at a selected age or grade has obvious drawbacks. A test taken at, say, age 15 or in eighth grade, provides but a snapshot of a longer developmental trajectory of student competencies (Kerckhoff, 1993). We may hope that these snapshot measures are reliable predictors of later student outcomes in terms of both competencies and credentials. But even if they were, they do not allow us to estimate the contribution of the education system and its institutional design towards the creation and distribution of final student competencies and credentials.

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