University of Kent

# Kent Academic Repository

**Schnabel, Johanna, Ballantyne, Steven, Giudici, Anja, Dardanelli, Paolo, Davies, Bethan and Dimcheva, Yordanka (2026) *Education Policy in Multilevel Systems: Introducing the Index of Regional Powers in Education (IRPE)*. Policy Studies Journal, 54 (4). ISSN 0190-292X.**

## Downloaded from

https://kar.kent.ac.uk/118040/ The University of Kent's Academic Repository KAR

## The version of record is available from

https://doi.org/10.1111/psj.70181

## This document version

Publisher pdf

## DOI for this version

## Licence for this version

CC BY (Attribution)

## Additional information

## Versions of research works

### Versions of Record

If this version is the version of record, it is the same as the published version available on the publisher's web site. Cite as the published version.

### Author Accepted Manuscripts

If this document is identified as the Author Accepted Manuscript it is the version after peer review but before type setting, copy editing or publisher branding. Cite as Surname, Initial. (Year) 'Title of article'. To be published in ***Title of Journal*** , Volume and issue numbers [peer-reviewed accepted version]. Available at: DOI or URL (Accessed: date).

## Enquiries

If you have questions about this document contact ResearchSupport@kent.ac.uk. Please include the URL of the record in KAR. If you believe that your, or a third party's rights have been compromised through this document please see our Take Down policy (available from https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies).

Check for updates

*Policy Studies Journal*

RESEARCH NOTE OPEN ACCESS

# Education Policy in Multilevel Systems: Introducing the Index of Regional Powers in Education (IRPE)

Johanna Schnabel[1] | Steven Ballantyne[1] | Anja Giudici[2] | Paolo Dardanelli[3] | Bethan Davies[2] | Yordanka Dimcheva[3]

[1]Freie Universität Berlin, Berlin, Germany | [2]Cardiff University, Cardiff, Wales, UK | [3]University of Kent, Canterbury, Kent, UK

**Correspondence:** Johanna Schnabel (johanna.schnabel@fu-berlin.de)

**Received:** 28 January 2026 | **Revised:** 25 September 2026 | **Accepted:** 27 October 2026

**Keywords:** decentralization | education policy | federalism | inequality | multilevel systems

**关键词:** 权力下放 | 教育 | 联邦制

**Palabras Clave:** descentralización | educación | federalismo

## ABSTRACT

The distribution of powers over education policy is a deeply contested issue in many countries. While education is central to national economic and social agendas, it is also a policy domain in which regional governments play a prominent role in modern democracies. However, there is still limited knowledge on the extent of regional powers over education. While many indices only measure a country's overall level of regional powers, policy-specific indicators do not distinguish between different dimensions of education policy shown to be politically relevant and to affect educational and societal outcomes. To provide a more detailed measure, this research note presents the Index of Regional Powers in Education (IRPE): A composite index that captures the powers of regions regarding three dimensions of education policy (distribution, stratification, content), focusing on primary and lower secondary education and access to pre-school. Based on data from eight OECD countries with different forms of territorial governance, the research note illustrates, descriptively, cross-country trends revealed by the IRPE. Regional powers tend to be higher in distribution and stratification, while content remains largely a central government power. The IRPE advances existing measures through stronger conceptualization and finer measurement and is scalable to wider contexts.

## 摘要

在许多国家, 教育政策的权力分配是一个极具争议的问题。教育不仅是国家经济与社会议程的核心, 在现代民主国家中, 它也是区域政府发挥重要作用的政策领域。然而, 目前学界较少聚焦于区域政府在教育领域所拥有的权力范围。现有许多指数仅能衡量一国区域权力的整体水平, 而针对特定政策的指标, 往往未能区分教育政策中那些具有政治意义、且会影响教育及社会产出的不同维度。为提供更精细的衡量工具, 本研究报告提出了“教育领域区域权力指数”(IRPE)。该综合指数涵盖了区域政府在教育政策三个维度(资源分配、分层结构、教学内容)上的权力, 重点关注小学、初中阶段教育以及学前教育的入学机会。本研究基于八个具有不同领土治理模式的经合组织国家的数据, 对IRPE所揭示的跨国趋势进行了描述性分析。研究发现, 区域政府在资源分配和分层结构方面的权力往往较大, 而教学内容方面的权力则主要由中央政府掌握。IRPE通过更严谨的概念界定和更精细的测量方式, 完善了现有的衡量指标, 且具备在更广泛情境下应用的扩展性。

## RESUMEN

La distribución de competencias en materia de política educativa es un tema de profundo debate en muchos países. Si bien la educación es fundamental para las agendas económicas y sociales nacionales, también constituye un ámbito político en el que los

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2026 The Author(s). *Policy Studies Journal* published by Wiley Periodicals LLC on behalf of Policy Studies Organization.

gobiernos regionales desempeñan un papel destacado en las democracias modernas. Sin embargo, aún existe un conocimiento limitado sobre el alcance de dichas competencias regionales. Si bien muchos índices solo miden el nivel general de competencias regionales de un país, los indicadores específicos de políticas no distinguen las diferentes dimensiones de la política educativa que han demostrado ser políticamente relevantes y que afectan los resultados educativos y sociales. Para ofrecer una medición más detallada, esta nota de investigación presenta el Índice de Competencias Regionales en Educación (IPRE): un índice compuesto que refleja las competencias de las regiones en relación con tres dimensiones de la política educativa (distribución, estratificación y contenido), centrándose en la educación primaria y secundaria básica y el acceso a la educación preescolar. Con base en datos de ocho países de la OCDE con diferentes formas de gobernanza territorial, la nota de investigación ilustra, de forma descriptiva, las tendencias entre países reveladas por el IPRE. Las competencias regionales tienden a ser mayores en distribución y estratificación, mientras que el contenido sigue siendo en gran medida competencia del gobierno central. El IRPE mejora las medidas existentes mediante una conceptualización más sólida y una medición más precisa, y es escalable a contextos más amplios.

## 1 | Introduction

Contemporary democracies consist of multiple layers of government responsible for policymaking (Tatham et al. 2021). This structure is particularly evident in education, a policy area in which regional governments play a prominent role (Dardanelli 2019; Dardanelli et al. 2019; Dougherty and Phillips 2019). This role stems from the origins of education in local communities, before state-building efforts sought greater centralization. In some countries, local rootedness limited reforms transferring powers to the central government to specific levels (e.g., higher education) or aspects (e.g., access or the curriculum) (Ansell and Lindvall 2021; Green 1990). In others, education became a core dimension of the autonomy of regional governments, though in some federations (e.g., Switzerland), the central government has recently gained powers over some dimensions of education policy (Fischer et al. 2010). In other countries, such as Spain, the central government exercises significant powers, but powers over particular dimensions and levels of education have been later transferred to regions, sometimes following the advice of international organizations (Fiske 1997).

In modern knowledge-based societies, education is a key policy area. Knowledge economies rely on the availability of relevant skills, the production of which rests largely with education systems (Green-Pedersen 2019). In the context of the widespread shift from welfare to social investment policies, education has also become a crucial means of reducing social inequality and fostering social cohesion (Carstensen and Emmenegger 2023), while remaining a key site for identity-building and recognition (Benei 2008). The importance attributed to education in state budgets and by the public has increased as a result (Garritzmann et al. 2022)—as has its politicization (Gingrich and Giudici 2025).

Given the social, cultural, economic, and political relevance of education, it is important to know where education policy is made. This is necessary groundwork for studies on the determinants of education policy, on variation in education policy within and across countries, and on the consequences of distributing powers across levels of government. Because of the multi-dimensional nature of education policy, such groundwork requires capturing regional powers across the different dimensions of education.

Initial research suggests that the distribution of educational powers is consequential, but disagrees on its effects. Drawing on existing indices, some authors find a positive relationship between regional powers and educational outcomes (Xabel Lastra-Anadón and Mukherjee 2019). While this literature seems to confirm theories expecting the allocation of powers to lower tiers of government to improve public-service provision through mechanisms of competition, policy learning, and responsiveness to local needs (Inman 2007), other studies find that such allocation negatively affects educational outcomes (Freitag and Schlicht 2009; Schnabel 2025). However, existing indices, including the Regional Authority Index (Hooghe et al. 2016), do not examine education policy individually or cover the policy area without distinguishing between levels and dimensions or aspects of education policy (Dardanelli et al. 2019a). Indices focused on education are based on surveys, with significant limitations in terms of reliability, or only capture aspects related to education expansion (Dougherty and Phillips 2019; Garritzmann et al. 2021). Without a more comprehensive, analytically and conceptually grounded index, we lack the foundation to evaluate the impact of regional powers on educational and social outcomes and their determinants.

To offer a more detailed and rigorous measurement of regional powers in education, this research note presents a new original index, the Index of Regional Powers in Education (IRPE), which measures regional powers in three key dimensions of education policy: distribution, stratification, and content, each comprising multiple variables. It concentrates on the levels of education that affect the entire cohort—primary and lower secondary education—and includes access to pre-schooling. The IRPE includes eight OECD countries in the period 2000–2024: four federal countries (Australia, Canada, Germany, Switzerland), two unitary countries (France, Norway), and two formerly unitary countries that have acquired some federal traits (Italy, Spain).

## 2 | Conceptualizing and Measuring Regional Powers in Education

Three analytical choices are foundational to the IRPE. First, following the Regional Authority Index (Hooghe et al. 2016) and the Regional Education Authority Index (Garritzmann et al. 2021) we code regions' de jure powers. This approach conceptualizes power/s as the ability to enact binding policy decisions (e.g., through legislation, executive degrees, administrative acts, and



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

budgetary allocations).[1] This choice means we do not account for alternative forms of power, such as discursive power, the de facto exercise of power, and factors such as institutional capacity that impact regions' ability to exercise their powers or the manner in which they do so. A de jure approach facilitates the consistent and reliable collection and coding of comparative-longitudinal data, however.

Second, we focus on regional governments, defined as the highest tier below central government, following existing indices, which show that regional governments have traditionally played a more important role in the provision of public education than in many other government functions. While we acknowledge that local governments can play a significant role in education, they often implement regional or central government decisions and execute delegated tasks.[2] Therefore, we examine the distribution of powers between regional and central governments, including any delegation of policy responsibilities to lower tiers. We capture the power dynamics of horizontal coordination among regions by distinguishing between voluntary coordination, which we code as regions retaining full powers, and coordination mandated by the constitution or central government, in which case regions do not possess full powers.[3]

Finally, existing indices that measure the distribution of powers across levels of government tend to treat education as a one-dimensional policy area (see Section 2.1). They either capture education "as such" or focus on educational expansion, measured through enrolment or spending data. However, education systems vary substantially in features other than expansion, including the regulation of private provision (Verger et al. 2016), the structure of curricula (Holmes and McLean 1989), and efforts to monitor school quality (Teltemann and Jude 2019). These features have shaped the political contestation around education while also determining its social, cultural, and economic outcomes (see Section 2.2). Considering education as a multidimensional policy area thus constitutes our third analytical choice.

The following section reviews existing indices in terms of their robustness in measuring the distribution of powers across levels of government, before outlining how we designed the IRPE to offer a conceptually grounded multi-dimensional measurement of regional powers in education.

## 2.1 | Existing Indices

As mentioned above, general indices of regional powers cover education to a limited extent only (Dardanelli 2019; Dardanelli et al. 2019a; Hooghe et al. 2016),[4] while the more focused indices we review in this section come with limitations.

The OECD's Spending Autonomy Indicators (Dougherty and Phillips 2019; Reznichenko and Van Grieken 2019) were developed to measure sub-central powers across five policy areas, including education, going beyond previous measures using expenditure shares of sub-central units as a percentage of total country expenditure.[5] The individual indicators, which are aggregated into four dimensions and subsequently two indices, are derived from items in expert surveys. One advantage of the indices is that they can be used to compare the overall powers of lower tiers of government (regional, local, and provider) and, through comparisons of individual indicators and dimensions, different aspects within education. However, there are widely discussed limitations to the reliability and validity of expert survey data such as those used by the OECD (Steenbergen and Marks 2004; Tourangeau et al. 2000). What is more, the indicators are built using data from single surveys and thus provide only a snapshot, which decreases reliability. Being rooted in economics literature—indeed, they are published as part of the OECD *Fiscal* Decentralisation Database (emphasis added)—the selection of indicators is informed primarily by research in economics and lacks input from educational and political science. Relevant indicators related, for instance, to inclusion or differentiation are thus omitted.

The OECD's Indicators of Education Systems Programme (INES) also collects data on the powers of lower tiers of government (regional, local, provider) in education. As with the Spending Autonomy Indicators, INES uses expert survey data and aggregates individual indicators to separate dimensions of education. The data improve on the Spending Autonomy Indicators in two main aspects: first, surveys have been conducted periodically since 1998, which increases reliability and allows for longitudinal analyses. Second, three codes are used—full autonomy, after consultation, within framework (established by a higher level)—which provide more precise information than a simple allocation of authority among tiers of government. As with the Spending Autonomy Indicators, reliance on survey data decreases reliability. Although a range of survey items are included, important information such as variables related to inclusion and support for pupils with additional needs is missing.

The Regional Education Authority Index (REAI) (Garritzmann et al. 2021) is the closest to the IRPE in terms of its aims. However, it captures spending rather than policymaking powers. The REAI is an education-specific index of regional powers based on primary and secondary sources and supported by expert consultation on unclear cases. It measures the depth and scope of regional spending authority in 292 regions in 15 OECD countries between 1990 and 2010. Scope refers to the number of education levels (primary and secondary, tertiary academic, and tertiary vocational) that regions can spend on. Depth refers to regional powers over different aspects of the education system. The number of countries and regions included in the index represents an advance on single or small-N case studies in terms of the potential to draw generalizable inferences. However, the operationalization of Scope and Depth remains broad. Scope does not differentiate between the sources of funding and the allocation of funding, nor between funding different aspects of the education systems (e.g., teacher salaries, spending on schools). Depth excludes important areas such as teacher training and pupil assessment, testing, and qualifications. Consequently, the REAI does not fully do justice to the multi-dimensional nature of education policy.

The indices discussed have facilitated research on questions related to regional powers in education. The IRPE, which we present in the following section, builds on their strengths while seeking to overcome their limitations.



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

## 2.2 | Introducing the Index of Regional Powers in Education (IRPE)

Education is a multifaceted policy field. Powers can concern aspects as diverse as compulsory pre-school or teaching qualifications. Comparative research shows these and other policy aspects vary in terms of their politics and influence on educational, social, and economic outcomes, depending on the level and dimension of education to which they relate (Busemeyer et al. 2020; Gingrich and Giudici 2025; Patrinos and Psacharopoulos 2026; Rivkin and Schiman 2015). We build on this work to define the scope of the IRPE and conceptualize its measurement of education policy, in order to maximize its value for future research on the impact and determinants of the distribution of powers in education. Thus, in addition to the methodological improvements addressing the reliability of measuring the distribution of powers (see Section 2.1), a key strength of the IRPE is that it constitutes the first multidimensional, conceptually grounded measurement of regional powers in education. This section explains our conceptualization.

Studies find significant differences in the effects of reforms between educational levels. Successful reforms to compulsory or universal schooling and pre-schooling affect outcomes across a cohort (Ansell 2010; Chetty and Friedman 2016). By contrast, reforms targeting non-compulsory higher, vocational, and further education only impact specific subsets of a student cohort, the size of which can vary regionally (Bolton 2025) and is socially skewed (Ansell 2010). The politics regarding those levels vary accordingly (Ansell 2010; Busemeyer et al. 2020). To maximize applicability and provide initial conceptual and empirical groundwork on the educational levels with more universal implications, the IRPE measures the distribution of power over compulsory (primary and lower-secondary, ISCED 1–2) schooling and access to pre-school education.

Recent studies distinguish reforms based on their social, educational, or economic impact, and the politics behind them. One important distinction this work advances is that some policy decisions (e.g., expanding access) have more distributive implications, while others (e.g., funding private schools) are more redistributive (Ansell 2010; Busemeyer et al. 2020). A second distinction is that between reforms that modify the extent and level of education children receive and those affecting its quality and content (OECD 2025a; Patrinos and Psacharopoulos 2026). We draw on these distinctions to conceptualize three dimensions of education policy: the distribution of education, its re-distributive stratification, and teaching content. Each dimension comprises two sub-dimensions consisting of several variables related to the relevant policy aspects, in each of which regional governments can possess more or less power (see Table 1).

Our goals in selecting variables for each (sub-) dimension were twofold. The first goal is to ensure the IRPE's compatibility with existing comparative databases on the politics of education and national-level institutional variation in education. The second goal is to capture power over aspects of education that shape the politics of education and influence major educational, economic, and social outcomes.

We therefore draw on the widely used OECD PISA school questionnaires and INES to select variables (OECD 2017a, 2022). Representing the OECD's specific educational understandings and agenda, these instruments mainly capture aspects relating to the distribution and, to some extent, quality of schooling. We thus refined and complemented the identified variables using comparative studies on institutional variation in education, which focus more on the stratification and content of education (specifically: Blat Gimeno and Marín Ibáñez 1981; Bromley et al. 2023; Busemeyer et al. 2020; Gingrich et al. 2024; Verger et al. 2016). Finally, we cross-checked the relevance of each variable by consulting reports from international organizations and more specialized academic studies (indicated below), prioritizing comparative and longitudinal research. This final step led us to eliminate selected variables (e.g., the existence of primary-level

**TABLE 1** | Conceptualization behind the IRPE.

| Dimensions | Sub-dimensions | Variables related to regional power over the following policy aspects |
|---|---|---|
| Distribution | Access | ... Determining the extent of compulsory education |
| | | ... Facilitating or mandating access to pre-school education |
| | | ... Regulating norms for progression and repetition |
| | | ... Determining support for previously underserved groups |
| | Resources | ... Regulating the amount and modalities of school funding and spending |
| | | ... Setting and funding teacher salaries and pensions |
| Stratification | Differentiation | ... Designing tracking |
| | | ... Designing streaming and setting |
| | School choice and standardization | ... Freedom of choice |
| | | ... Regulation of school provision |
| Content | Curriculum | ... Determining content, qualifications, and testing |
| | | ... Deciding which subjects to teach and how to allocate teaching time |
| | Quality | ... Determining teacher hiring criteria, training and inspection |
| | | ... Assessing and monitoring schools |



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

certificates) and to refine those remaining. As a result, the IRPE measures regional powers based on 37 variables designed to capture the distribution, stratification, and content of schooling. To clarify our conceptual logic, we briefly describe each dimension and sub-dimension, as well as its main underlying sources, below:

#### 2.2.1 | Distribution

This dimension comprises aspects of education policy that determine who receives education and at what cost, covering several aspects related to education expansion. This is the dimension most international indicators and political science research focus on, and it is typically broken down into two sub-dimensions: access and resources (Ansell 2010; OECD 2017a). Abundant evidence links both sub-dimensions to outcomes such as educational achievement, social inequality, and health. Specifically, access has a strong impact in the context of compulsory education, with the OECD (2025b) calling it "a precondition to inclusion and equity in education". Although the countries included in the IRPE achieved virtually universal primary and secondary schooling prior to the period under consideration, differences remain in a series of relevant indicators: the length of time children are required to spend in schooling (Lavy 2015), access to pre-schooling (Goodman and Sianesi 2005), progression regulations (OECD 2012), and support for formerly underserved groups (ibid.). We therefore code regional powers over all of these.

Resources could be spent on various policy aspects, including reforms covered in other sub-dimensions. Therefore, we focus on the two areas deemed particularly relevant to education politics and outcomes and measure regional power over (a) school spending (Baker 2018; OECD 2017b) and (b) teacher salaries and pensions (Imazeki 2005; Moe and Wiborg 2017).

#### 2.2.2 | Stratification

Education systems differ in the extent to which they differentiate and hierarchize learning opportunities, and in the logic they use to sort students into them (Domina et al. 2017). Based on foundational studies on educational structures (Allmendinger 1989; Busemeyer 2014), we measure regional powers over the two most consequential, and potentially substitutive, types of stratification: differentiation and choice. Both have been at the center of post-1945 educational reform due to their redistributive effects (Busemeyer 2014; Gingrich 2011). Indeed, while the impact of different types of differentiation on overall achievement remains contested, abundant research links them to educational inequality, particularly along class and ethnic lines (de Werfhorst and Mijs 2010; Gingrich et al. 2024; OECD 2025b). Therefore, we code the distribution of power over the relevant types of differentiation highlighted in this research, including tracking students into different schools and into streams and sets within schools.

The extent of choice that parents have in a system is affected by policy aspects that target their freedom to choose between options and the extent to which these options differ (Verger et al. 2016). We include these two aspects as variables measuring regional powers over freedom of choice and regulating school provision in the public and private sectors. Although research on the effects of choice on overall achievement is inconclusive, there is evidence suggesting it increases inequality (Epple et al. 2017; Green 2024; OECD 2024).

#### 2.2.3 | Content

Drawing on research that separates debates about the school curriculum from questions about how well content is taught (Gingrich and Giudici 2025; OECD 2023), this dimension comprises the two sub-dimensions: curriculum and quality. Regarding the curriculum, we specifically code powers over time allocation and the determination of content and qualifications that students are expected to acquire. Having been found to be highly relevant to student outcomes, both aspects have been the subject of intense reform debate and activity (OECD 2021; Rivkin and Schiman 2015; Yeşil Dağlı 2019).

Education research typically distinguishes between input and output quality measures. In the Global North, the former were traditionally associated with continental European educational traditions and the latter with Anglo-American ones. As these two traditions have converged since the 2000s (Hopmann 2008; Verger et al. 2019), we capture them both. Specifically, we code authority over input-quality measures such as teacher training, qualifications, and school inspections (Darling-Hammond 2000; Harris and Sass 2011; Loughran and Hamilton 2016; OECD 2019). On the output side, we code powers over testing and accountability (OECD 2023; Verger et al. 2019).

As mentioned above, the IRPE builds on existing indices while seeking to overcome their limitations in several ways. First, the operationalization of the three dimensions of education policy, including the selection of variables, goes beyond spending and is theoretically informed by political science and education science literature (see Section 2.2), increasing our confidence that the most important aspects of education policy are included. As a result, the IRPE can be used to address a wide range of research questions in combination with other data. Second, by collecting data over a 20-year period (2000–2024), it allows for longitudinal analyses. Third, each code is based on authoritative sources (e.g., legislation), which increases reliability. The IRPE follows the REAI in coding regions' de jure powers. However, in the coding summaries, we follow the OECD's approach by considering where de jure responsibility differs from the de facto exercise of powers. Lastly, the use of three codes allows for a more precise measurement of regional powers than dichotomous coding and better reflects empirical reality.

## 3 | Data and Coding

The IRPE includes eight countries: Australia, Canada, France, Germany, Italy, Norway, Spain, and Switzerland. This sample is intended to capture variation across state structures in democracies as it includes four federal countries (Australia, Canada,



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Germany, and Switzerland), two unitary countries (France and Norway), and two formerly unitary countries that have acquired some federal traits (Italy and Spain).[6] To trace changes in regional powers over time, the period of observation spans 24 years, from 2000 to 2024, with region-year as the unit of measurement.

The IRPE consists of 37 variables measuring the dimensions above, coded based on primary sources and secondary literature. When considering sources, we prioritized those published by governmental and, in some cases, international bodies. These include central and regional constitutions, legislation and regulations, intergovernmental agreements, as well as international databases and publications by the OECD, UNESCO, the European Union, and central and regional governments. As the team lacked the language skills to code Norway, we relied on consultation with a country expert and translation of relevant primary sources using the translation platform DeepL, as well as sources published in English.

For each variable, we measure the extent of regional power. Therefore, we coded whether regional governments have no power (0), power within a central government framework (1), or full power (2). Having power within a central government framework means a region must comply with national standards set in a conditional grant program, central government framework legislation, or constitutional requirements. We acknowledge that regional governments, like central governments, may delegate the exercise of some of their powers to local governments or providers but do not attempt to capture the extent to which they do so in the IRPE. The codebook provides a short description of the variables and coding rules. The country summaries offer detailed information on and justification of coding decisions.[7]

In cases where there was limited or conflicting information, codes were double-checked with country experts. To assess cross-country coding consistency, variables were randomly distributed across the six researchers involved in this project, with each researcher checking six to seven variables.[8] As a result, all 37 variables were checked. Researchers confirmed the coding or flagged issues or uncertainty in a dedicated comments section, relying primarily on country summaries and consulting external sources when necessary. Initial agreement ranged between 57% (four out of seven variables) and 100% (seven out of seven variables). After the first round of checks, coders and reviewers discussed the flagged issues and updated the coding where appropriate. Following this procedure, 100% agreement was reached.

For the purpose of this research note, we aggregated the variables into dimensions and sub-dimensions by calculating the country mean across all variables of each dimension and sub-dimension and applying equal weights. We opted for equal weights because our objective here is to illustrate regional powers in a descriptive manner, rather than to use the index to analyze the relationship between regional powers and any specific outcome(s). We therefore make no assumptions about the importance of any dimension, sub-dimension, or variable to any outcome(s), which would require adjusting the weights accordingly. Empirical applications might apply different weighting depending on the specific research questions and theoretical expectations, particularly those relating to the unequal impact of different dimensions, sub-dimensions, or variables to their outcomes of interest. Researchers may also reassemble the variables to align with the purposes of their own research or analyze their effect individually.

## 4 | Regional Powers in Education in Eight OECD Countries

In this section we illustrate, descriptively, the cross-country trends revealed by the IRPE. The purpose is to demonstrate the IRPE in practice rather than make substantive claims, which would require additional significance testing. While we acknowledge that the relatively small changes observed over time could be attributed to measurement error, the validity checks (see Section 3) and use of both country and standardized means should minimize this possibility.

Figure 1 shows aggregate regional powers, calculated as the sum of scores (0–2) for all 37 variables. The potential aggregate score ranges from 0 (no regional powers) to 74 (full regional powers). Regions in the four federal countries in our sample (Australia, Canada, Germany, Switzerland) have the most powers (scores from 62 (Switzerland) to 71 (Canada) averaged over the period 2000–2024), whereas in unitary countries powers are wholly in the hands of the central government (score 0). There is a greater difference than might a priori be expected between the two unitary countries with federal traits, with regions in Spain having more powers (score 29) than Italy's special statute regions (score 18), which in turn have more powers than ordinary statute regions (score 6). The extent of regional powers in Spain falls between that of federal and unitary countries. In Italy, ordinary statute regions have only marginally more powers than regions in France and Norway.

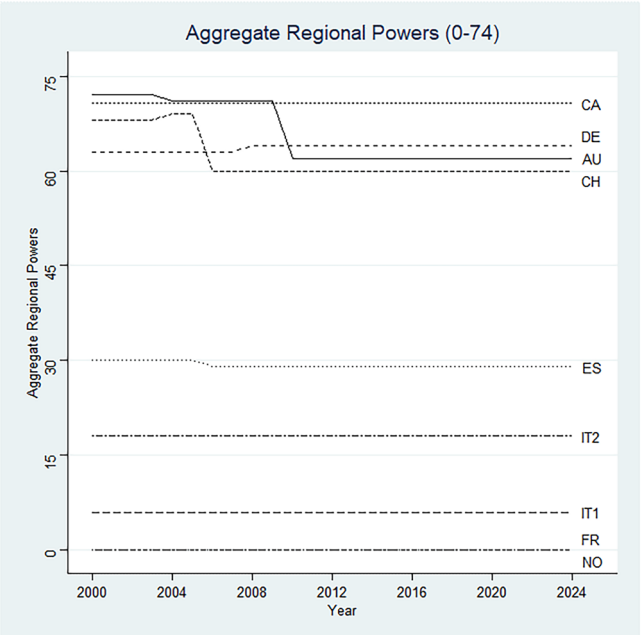


**FIGURE 1** | Aggregate regional powers (0–74). IT1 includes ordinary statute regions, IT2 includes special statute regions.



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Aggregate regional powers throughout the period 2000–2024 indicate relative stability over time (Figure 1). Among the non-federal countries, only one minor change occurred. Until 2006, the Spanish regions decided which textbooks were used, within a set list established by the central government (score 1). A national law in 2006 withdrew this power from the regions and transferred it to schools (score 0). In addition to France, Italy, and Norway, there were no changes in Canada. Smaller changes occurred in Germany, where a one-point increase in regional powers from 2008 reflects regions partially gaining powers to decide on inclusion policies for pupils with disabilities (score from 0 to 1).

In Australia and Switzerland, regional powers declined. This change in Australia from 2009 is explained by the signing of the National Education Agreement, which introduced a national curriculum for the first time, resulting in the score changing from 2 to 1 for variables in the curriculum and quality sub-dimensions. The decline in Switzerland is due to a 2006 constitutional amendment requiring regions to harmonize specific policy aspects, such as the school starting age and curriculum objectives, and authorizes federal authorities to intervene if they fail to do so. This reform results in a change from 2 to 1 in several variables within the content and distribution dimensions. The cases of Australia and Switzerland illustrate the value of tracing changes over time. Australian regions had the most powers of any in our sample in 2000 (score 72) but fell behind regions in Canada (score 71) and Germany (score 64) by 2024 (with a decline to 62 in Australia). While regions in Switzerland had more powers than their German counterparts in 2000 (scores 68 and 63 respectively), by 2024 they had the fewest powers among the four federal countries (score 60). This reflects the constitutional requirement for regions in Switzerland to harmonize their education systems, limiting regional powers. Regions in Germany also coordinate some aspects of education policy, but such coordination is voluntary, as there is no constitutional or legal requirement, and therefore reflects how they choose to exercise their de jure powers (see footnote 3).

Figure 2 shows the three dimensions: distribution, stratification, content. Similar to the aggregate scores (Figure 1), the four federal countries have the most powers across all three dimensions. Notwithstanding, the order of the countries varies across the dimensions, illustrating the added value of the IRPE

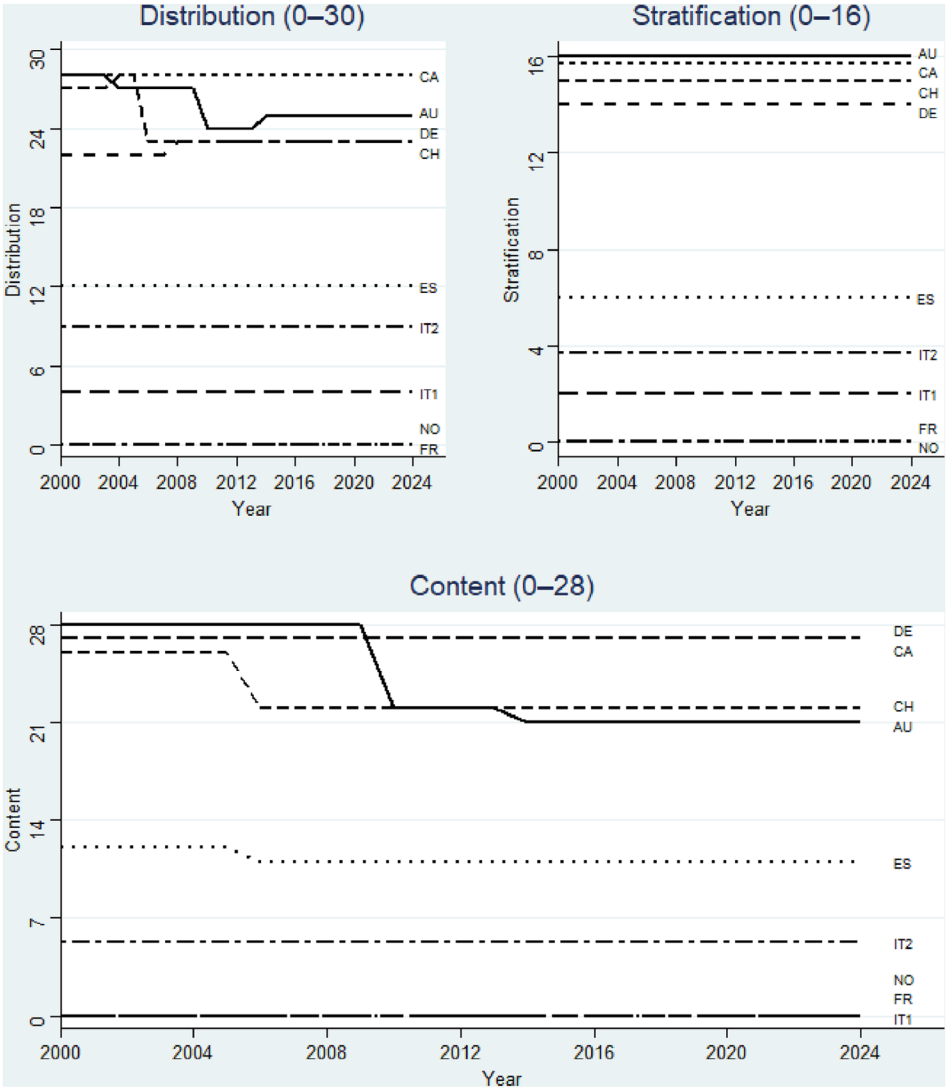


**FIGURE 2** | Regional powers by dimension: Distribution, stratification, content. IT1 includes ordinary statute regions, IT2 includes special statute regions.



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

in moving beyond an aggregate measure. For example, while regions in Canada have the most powers at the aggregate level, regions in Australia have more powers than those in Canada when it comes to stratification and regions in Germany are equal to those in Canada when it comes to content.

Declines in the scores for Australia and Switzerland in the distribution dimension are explained by changes to pre-school and school entry and exit ages. This is illustrated in Figure 3, in the decline in scores in access. For Australia, the Schools Assistance (Learning Together Through Choice and Opportunity) Act (2004) made regional harmonization of a common school starting age (by 2010) a condition of national funding and the National Youth Participation Requirements established a national minimum school leaving age (in effect 2010–2013). Separately, since 2009 national partnership agreements (a form of conditional grant) have required regions to expand universal pre-school. The decline in regional powers in resources is explained by a centralization of funding introduced in the Australian Education Act (2013). In Switzerland, a 2006 constitutional amendment




**FIGURE 3** | Regional powers by sub-dimension: Access and resources (distribution), differentiation and school choice, and standardization (stratification), curriculum and quality (content). IT1 includes ordinary statute regions, IT2 includes special statute regions.



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

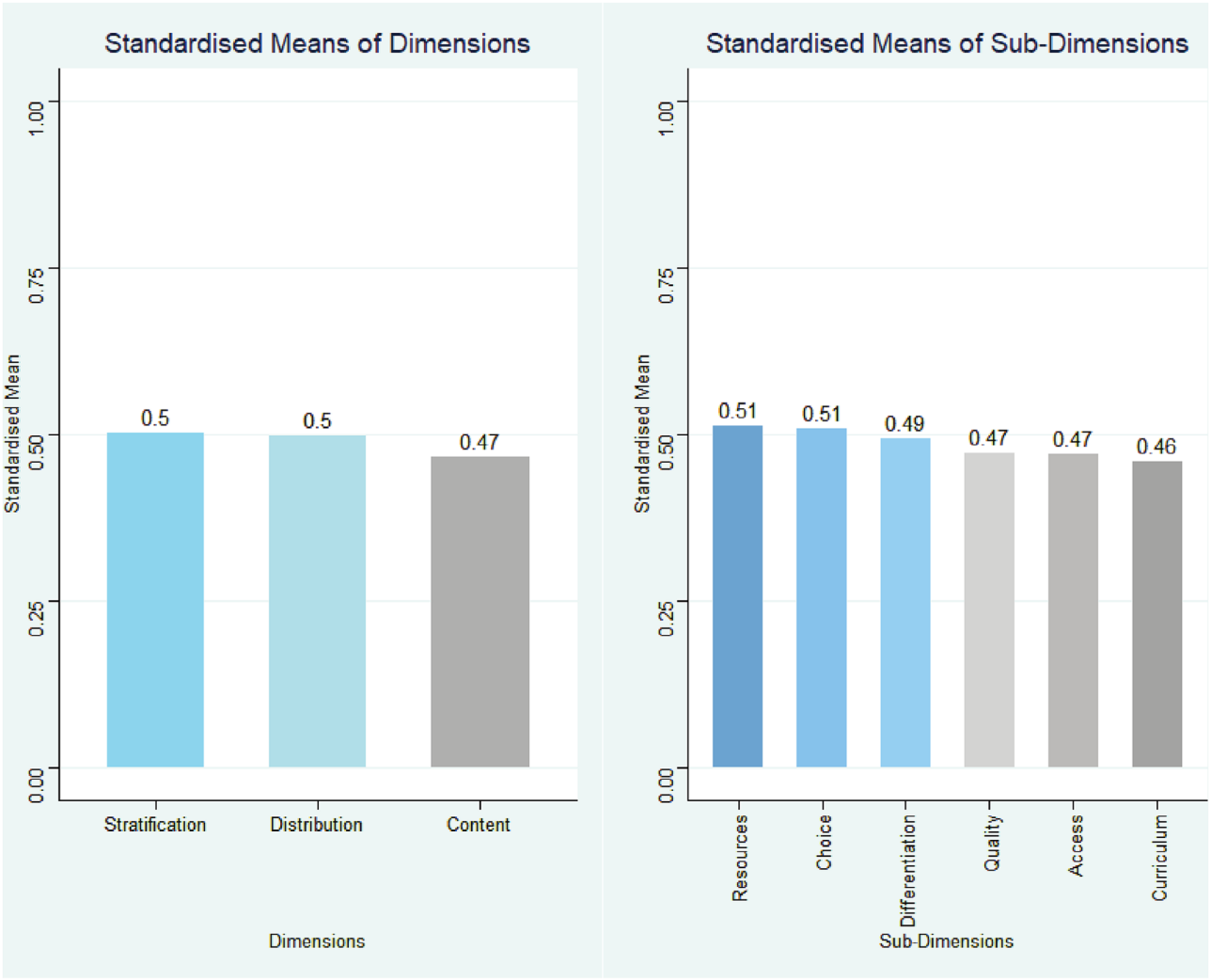


**FIGURE 4** | Standardized means of dimensions and sub-dimensions averaged across all years and regions. Higher score indicates more regional powers.

mandated the Swiss regions to harmonize the school entry age. Being set at 4 years old, it now covers the pre-school period.

Figure 4 shows the standardized means (range from 0 to 1) of the dimensions and sub-dimensions. As each dimension (and sub-dimension) contains different numbers of variables (and thus different potential scores), standardized means make them more comparable. In comparison to the country trends, these results allow us to draw preliminary inferences about which aspects of the education system regions have the most (and fewest) powers over.

The results show that regions have more powers over stratification and distribution than content. More specifically, regions have most powers over resources, school choice, and standardization and differentiation, and fewest powers over curriculum, access, and quality. The higher scores for resources, school choice, and standardization and differentiation reflect that many decisions related to spending are made by regions, regardless of how funds are raised, and that regions also tend to decide on the organizational structure of schooling. The lower scores for curriculum, quality, and access indicate that decisions regarding what and how pupils learn and are assessed, and access to schooling, tend to be powers of central governments.

## 5 | Application

Education is a major field of public policy, and its importance is likely to increase further as economies become even more knowledge intensive. Existing indices measuring the distribution of powers show that regional governments have traditionally played a more important role in the provision of public education than in many other government functions. This is true not only of federal states, where primary and secondary education is typically a regional power, but also of some unitary states where lower tiers of government have acquired educational powers. To explore to what extent and how education policy shapes educational, social, and economic outcomes within and across countries, we thus need to understand the role regional governments, not only central governments, play.

Existing indices have shed important light on the distribution of powers in education but still leave margins for improvement



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

in terms of conceptualization and measurement. The IRPE has been designed to offer a more detailed and rigorous measurement of regional governments' power to shape education policy. Conceptually, it is aligned with the state of the art in education and policy studies. Empirically, it measures 37 variables, aggregated into six sub-dimensions and three dimensions. The illustration of the IRPE based on data on eight OECD countries suggests that by focusing on the distribution of education, existing studies may overestimate central government powers in education and misrepresent complex patterns of the distribution of powers across place and time.

While we have applied the IRPE to an initial sample of eight OECD countries, it can be extended to any democracy in which regional governments play a role in policy-making and thus may shape education. A potentially rewarding extension of the IRPE could be to include local governments which often have responsibilities such as operating schools, supplementing statutory provisions, or providing additional funding. The challenge, however, is the large number of local governments in most countries as well as the differences across the constituent units in federal states regarding the structure and powers of local governments.

The IRPE is a significant original tool for studying and explaining the distribution of powers between central government and regions in education and lays the groundwork for studies on regional policy design, for example, to examine the extent to which regional powers result in policy diversity. Indeed, an associated index, the Index of Regional Policy Diversity in Education (IRDE), which measures regional policy diversity, will follow publication of the IRPE. The two indices align in the dimensions included and the countries and time period covered. The IRPE also lays the groundwork for exploring how the distribution of powers between central and regional governments affects educational outcomes. Relying on less robust conceptualization and measurement, existing studies seem to indicate significant contradictions and tradeoffs. Some link regional powers to increases in efficiency, access, and educational performance and attainment (Barankay and Lockwood 2007; Xabel Lastra-Anadón and Mukherjee 2019). Others show that regional powers have historically played a key role in accommodating diversity and increasing representation in diverse countries (Ansell and Lindvall 2021). Still others find that regional powers in education policy are a likely factor in determining territorial inequality (Schnabel 2025). With the IRPE, we now have an instrument with which to explore which dimensions matter in determining different outcomes, with important theoretical and policy implications.


### Acknowledgments

Open Access funding enabled and organized by Projekt DEAL.

### Funding

This work was supported by a grant from the Fritz Thyssen Foundation for a project on Territorial Inequality in Education.


### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

The data that support this study is available at: Ballantyne, S., Schnabel, J., Giudici, A., Dardanelli, P., Dimcheva, Y. and Davies, B. (2026). Index of Regional Powers in Education (IRPE). Harvard Dataverse. https://doi.org/10.7910/DVN/QLQYNO.

### Endnotes

[1] While our conceptualization is thus analogous to the term "authority" employed by others (e.g., Garritzmann et al. 2021; Hooghe et al. 2016), we use "power/s" to avoid confusion with authority understood as a unit of government, as in "a regional authority" or "local authority". Note that we code whether regions possess powers and not whether or to what extent they exercise these powers.

[2] In federations, the responsibilities of local governments can vary quite considerably across regions as local governments are under regional jurisdiction.

[3] We acknowledge that in systems of co-operative federalism such as Germany, regions can face pressure to engage in co-ordination, meaning it is not entirely voluntary (Scharpf 1988; 2008). Because of the focus on *de jure* powers, we do not attempt to capture such dynamics in this index.

[4] For a review see Appendix A.

[5] The OECD Spending Autonomy Indicators include the Spending Power (Dougherty and Phillips 2019) and Spending Autonomy (Reznichenko and Van Grieken 2019). However, there are no substantial differences between the two and, for simplicity, we review them together.

[6] Often referred to as regionalized (or devolved) countries, Italy's and Spain's federal traits include constitutionally entrenched status and powers of regional government (see Fenna and Schnabel 2024). However, in contrast to federations, regions do not possess *exclusive* powers in at least one key area of modern government.

[7] The codebook, country summaries, and dataset are available at https://doi.org/10.7910/DVN/QLQYNO. The codebook can be used by researchers to extend the index to additional countries and time periods and, in the future, to update the existing index. Appendix A shows the convergent validity of the IRPE with the REAI at the aggregate level.

[8] The team included two Lecturers (Assistant Professors), one Reader, and one Postdoctoral Researcher, all with relevant research experience in political science and educational science, as well as two Research Assistants (one with a PhD and the other with a bachelor's degree).

### References


Allmendinger, J. 1989. "Educational Systems and Labor Market Outcomes." *European Sociological Review* 5, no. 3: 231–250. https://doi.org/10.1093/oxfordjournals.esr.a036524.

Ansell, B. 2010. *From the Ballot to the Blackboard. The Redistributive Political Economy of Education*. Cambridge University Press.

Ansell, B., and J. Lindvall. 2021. *Inward Conquest. The Political Origins of Modern Public Services*. Cambridge University Press.

Baker, B. D. 2018. *Education Inequality and School Finance*. Harvard University Press.

Barankay, I., and B. Lockwood. 2007. "Decentralization and the Productive Efficiency of Government: Evidence From Swiss Cantons." *Journal of Public Economics* 91, no. 5–6: 1197–1218. https://doi.org/10.1016/j.jpubeco.2006.11.006.





15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Bartolini, S. 2004. "Old and New Peripheries in the Processes of European Territorial Integration." In *Restructuring Territoriality: Europe and the United States Compared*. Cambridge University Press.

Benei, V. 2008. *Schooling Passions*. Stanford University Press.

Blat Gimeno, J., and R. Marín Ibáñez. 1981. *The Education of Primary and Secondary School Teachers*. Unesco.

Bolton, P. 2025. *Higher Education Students Numbers*. House of Commons Library.

Bromley, P., J. Furuta, R. Kijma, L. Overbey, M. Choi, and H. Santos. 2023. "Global Determinants of Education Reform 1960 to 2017." *Sociology of Education* 96, no. 2: 149–167. https://doi.org/10.1177/00380407221146773.

Busemeyer, M. R. 2014. *Skills and Inequality*. Cambridge University Press.

Busemeyer, M. R., J. L. Garritzmann, and E. Neimanns. 2020. *A Loud but Noisy Signal? Public Opinion and Education in Western Europe*. Cambridge University Press.

Carstensen, M. B., and P. Emmenegger. 2023. "Education as Social Policy: New Tensions in Maturing Knowledge Economies." *Social Policy and Administration* 57: 1–13. https://doi.org/10.1111/spol.12888.

Chetty, R., and J. N. Friedman. 2016. *School Quality and Income Inequality: The Long-Term Effects of Early Childhood Education*. Vol. 22, 6–8. Federal Reserve Bank of Boston.

Dardanelli, P. 2019. "Conceptualizing, Measuring, and Mapping State Structures—With an Application to Western Europe, 1950–2015." *Publius: The Journal of Federalism* 49, no. 2: 271–298. https://doi.org/10.1093/publius/pjy019.

Dardanelli, P., J. Kincaid, A. Fenna, et al. 2019. "Dynamic de/Centralisation in Federations: Comparative Conclusions." *Publius: The Journal of Federalism* 49, no. 1: 194–219. https://doi.org/10.1093/publius/pjy037.

Dardanelli, P., J. Kincaid, A. Fenna, A. Kaiser, A. Lecours, and A. K. Singh. 2019a. "Conceptualizing, Measuring, and Theorizing Dynamic de/Centralization in Federations." *Publius: The Journal of Federalism* 49, no. 1: 1–29. https://doi.org/10.1093/publius/pjy036.

Dardanelli, P., J. Kincaid, A. Fenna, A. Kaiser, A. Lecours, and A. K. Singh. 2019b. "Conceptualizing, Measuring, and Theorizing Dynamic De/Centralization in Federations." *Publius: The Journal of Federalism* 49, no. 1: 1–29. https://doi.org/10.1093/publius/pjy036.

Darling-Hammond, L. 2000. "Teacher Quality and Student Achievement: A Review of State Policy Evidence." *Education Policy Analysis Archives* 8, no. 1: 1–44. https://doi.org/10.14507/epaa.v8n1.2000.

de Werfhorst, H. G., and J. J. B. Mijs. 2010. "Achievement Inequality and the Institutional Structure of Educational Systems: A Comparative perspective." *Annnual Review of Sociology* 36: 407–428. https://doi.org/10.1146/annurev.soc.012809.102538.

Domina, T., A. Penner, and E. Penner. 2017. "Categorical Inequality: Schools as Sorting Machines." *Reviewing Sociology* 43: 311–330. https://doi.org/10.1146/annurev-soc-060116-053354.

Dougherty, S., and L. Phillips. 2019. "The Spending Power of Sub-National Decision Makers Across Five Policy Sectors." *OECD Working Papers on Fiscal Federalism* 25, no. 2: 1–98.

Epple, D., R. E. Romano, and M. Urquiola. 2017. "School Vouchers: A Survey of the Economics Literature." *Journal of Economic Literature* 55, no. 2: 441–492. https://doi.org/10.1257/jel.20150679.

Fenna, A., and J. Schnabel. 2024. "What Is Federalism? Some Definitional Clarification." *Publius: The Journal of Federalism* 54, no. 2: 179–200. https://doi.org/10.1093/publius/pjad034.

Fischer, M., P. Sciarini, and D. Traber. 2010. "The Silent Reform of Swiss Federalism: The New Constitutional Articles on Education." *Swiss Political Science Review* 16, no. 4: 747–771. https://doi.org/10.1002/j.1662-6370.2010.tb00447.x.

Fiske, E. B. 1997. *Decentralization of Education. Politics and Consensus*. World Bank.

Freitag, M., and R. Schlicht. 2009. "Educational Federalism in Germany: Foundations of Social Inequality in Education." *Governance* 22, no. 1: 47–72. https://doi.org/10.1111/j.1468-0491.2008.01421.x.

Garritzmann, J. L., S. Häusermann, and B. Palier, eds. 2022. *The World Politics of Social Investment*. Oxford University Press.

Garritzmann, J. L., L. Röth, and H. Kleider. 2021. "Policy-Making in Multi-Level Systems: Ideology, Authority, and Education." *Comparative Political Studies* 54, no. 12: 2155–2190. https://doi.org/10.1177/0010414021997499.

Gingrich, J. 2011. *Making Markets in the Welfare State*. Cambridge University Press.

Gingrich, J., and A. Giudici. 2025. "Who Polarises? Who Targets? Parties' Educational Speech Over the Long Run." *European Political Science Review* 64, no. 3: 1276–1303. https://doi.org/10.1111/1475-6765.12747.

Gingrich, J., A. Giudici, and D. McArthur. 2024. "Multidimensionality Matters: The Implications of Educational Hierarchy and Differentiation for Intergenerational Mobility in Europe." *Comparative Education Review* 68, no. 2: 238–261. https://doi.org/10.1086/729572.

Goodman, A., and B. Sianesi. 2005. "Early Education and Children's Outcomes: How Long Do the Impacts Last?" *Fiscal Studies* 26, no. 4: 513–548. https://doi.org/10.1111/j.1475-5890.2005.00022.x.

Green, A. 1990. *Education and State Formation*. St. Martin's Press.

Green, F. 2024. "Private Schools and Inequality." *Oxford Open Economics* 3, no. 1: 842–849. https://doi.org/10.1093/ooec/odad036.

Green-Pedersen, C. 2019. *The Reshaping of West European Party Politics: Agenda-Setting and Party Competition in Comparative Perspective*. Oxford University Press. https://doi.org/10.1093/oso/9780198842897.001.0001.

Harris, D. N., and T. R. Sass. 2011. "Teacher Training, Teacher Quality and Student Achievement." *Journal of Public Economics* 95, no. 7: 798–812. https://doi.org/10.1016/j.jpubeco.2010.11.009.

Holmes, B., and M. McLean. 1989. *The Curriculum. A Comparative Perspective*. Routledge.

Hooghe, L., G. Marks, A. H. Schakel, S. Niedzwiecki, S. Chapman Osterkatz, and S. Shair-Rosenfield. 2016. *Measuring Regional Authority: A Postfunctionalist Theory of Governance, Volume 1*. Oxford University Press.

Hopmann, S. T. 2008. "No Child, no School, no State Left Behind: Schooling in the Age of Accountability." *Journal of Curriculum Studies* 40, no. 4: 417–456. https://doi.org/10.1080/00220270801989818.

Imazeki, J. 2005. "Teacher Salaries and Attrition." *Economics of Education Review* 24, no. 4: 431–449. https://doi.org/10.1016/j.econedurev.2004.07.014.

Inman, R. P. 2007. "Federalism's Values and the Value of Federalism." *CESifo Economic Studies* 53, no. 4: 522–560. https://doi.org/10.1093/cesifo/ifm018.

Kazepov, Y., ed. 2010. *Rescaling Social Policies: Towards Multilevel Governance in Europe*. Routledge.

Keating, M. 1998. *The New Regionalism in Western Europe: Territorial Restructuring and Political Change*. E. Elgar.

Ladner, A., N. Keuffer, H. Baldersheim, et al. 2016. "Self-Rule Index for Local Authorities. Relase 1.0. Final Report." https://doi.org/10.2776/432291.



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Lavy, V. 2015. "Do Differences in Schools' Instruction Time Explain International Achievement Gaps? Evidence From Developed and Developing Countries." *Economic Journal* 125, no. 588: F397–F424. https://doi.org/10.1111/ecoj.12233.

Loughran, J., and M. L. Hamilton. 2016. *International Handbook of Teacher Education*. Springer.

Moe, T. M., and S. Wiborg, eds. 2017. *The Comparative Politics of Education. Teacher Unions and Education Systems Around the World*. Cambridge University Press.

OECD. 2012. *Equity and Quality in Education: Supporting Disadvantaged Students and Schools*. OECD Publishing.

OECD. 2017a. *OECD Handbook for Internationally Comparative Education Statistics*. OECD Publishing.

OECD. 2017b. *The Funding of School Education*. OECD Publishing.

OECD. 2019. *Education Policy Outlook 2019*. OECD Publishing.

OECD. 2021. *Adapting Curriculum to Bridge Equity Gaps: Towards an Inclusive Curriculum*. OECD Publishing. https://doi.org/10.1787/6b49e118-en.

OECD. 2022. *School Questionnaire for PISA 2022*. OECD Publishing.

OECD. 2023. *Equity and Inclusion in Education*. OECD Publishing.

OECD. 2024. *How Do Public and Private Schools Differ in OECD Countries?* OECD Publishing.

OECD. 2025a. *Education Policy Outlook 2025: Nurturing Engaged and Resilient Lifelong Learners in a World of Digital Transformation*. OECD Publishing. https://doi.org/10.1787/c3f402ba-en.

OECD. 2025b. *Equity*. OECD Publishing.

Patrinos, H. A., and G. Psacharopoulos. 2026. "The Effect of Raising School Quality on Earnings." *Prospects*. https://doi.org/10.1007/s11125-026-09767-x.

Reznichenko, E., and B. J. Van Grieken. 2019. "Spending Autonomy of Sub-Central Governments: Conceptualization and Measurement." 15th Annual Meeting of the Network on Fiscal Relations Across Levels of Government.

Rivkin, S. G., and J. C. Schiman. 2015. "Instruction Time, Classroom Quality, and Academic Achievement." *Economic Journal* 125, no. 588: F425–F448. https://doi.org/10.1111/ecoj.12315.

Scharpf, F. W. 1988. "The Joint-Decision Trap: Lessons from German Federalism and European Integration." *Public Administration* 66: 239–278. https://doi.org/10.1111/j.1467-9299.1988.tb00694.x.

Scharpf, F. W. 2008. "Community, Diversity and Autonomy: The Challenges of Reforming German Federalism." *German Politics* 17, no. 4: 509–521. https://doi.org/10.1080/09644000802490568.

Schnabel, J. 2025. "A Postcode Lottery in Education? Explaining Regional Inequality in Multilevel Systems." *Policy Studies Journal* 53, no. 2: 263–284. https://doi.org/10.1111/psj.12565.

Steenbergen, M. R., and G. Marks. 2004. "Evaluating Expert Judgments." *European Journal of Political Research* 46, no. 3: 347–366. https://doi.org/10.1111/j.1475-6765.2006.00694.x.

Tatham, M., L. Hooghe, and G. Marks. 2021. "The Territorial Architecture of Government." *Governance* 34, no. 3: 607–620. https://doi.org/10.1111/gove.12603.

Teltemann, J., and N. Jude. 2019. "Assessments and Accountability in Secondary Education: International Trends." *Research in Comparative and International Education* 14, no. 2: 249–271. https://doi.org/10.1177/1745499919846174.

Tourangeau, R., L. J. Rips, and K. Rasinski. 2000. *The Psychology of Survey Response*. Cambridge University Press.

Verger, A., C. Fontdevila, and A. Zancajo. 2016. *The Privatization of Education. A Political Economy of Global Education Reform*. Teachers College Press.

Verger, A., L. Parcerisa, and C. Fontdevila. 2019. "The Growth and Spread of Large-Scale Assessments and Test-Based Accountabilities: A Political Sociology of Global Education Reforms." *Educational Review* 71, no. 5: 5–30. https://doi.org/10.1080/00131911.2019.1522045.

Xabel Lastra-Anadón, C., and S. Mukherjee. 2019. *Cross-Country Evidence on the Impact of Decentralisation and School Autonomy on Educational Performance*. Vol. 26. OECD Working Papers on Fiscal Federalism.

Yeşil Dağlı, Ü. 2019. "Effect of Increased Instructional Time on Student Achievement." *Educational Review* 71, no. 4: 501–517. https://doi.org/10.1080/00131911.2018.1441808.

## Appendix A

### Additional Indices

The Regional Authority Index (RAI) (Hooghe et al. 2016) emerged at a time of increased scholarly interest in multi-level governance, which is partly attributable to the process of European integration but also to processes of decentralization which can be traced back to the 1970s (Bartolini 2004; Kazepov 2010; Keating 1998). The index can be considered seminal for its conceptualization of regional authority as well as its temporal and geographical scope: the latest version (3.1) includes 96 countries in the period 1950–2018. The index has been widely used as an explanatory or control variable, partly due to the straightforward inclusion in statistical analyses, and is widely cited. The index is made up of two dimensions (self-rule and shared rule), each including five variables. Education is included only as one of the policy sectors ("cultural-educational policy") within the policy scope variable, which limits its usefulness in comparative education research. Nonetheless, the index—specifically in its conceptual contribution and robust empirical strategy—has been foundational to the development of more education-specific indices and, subsequently, to the IRPE.

The Local Autonomy Index (LAI) (Ladner et al. 2016) is similar to the RAI in its structure and approach. The main difference is its focus on local (i.e., units below regions, such as municipalities) rather than regional authority. It is, like the RAI, an index which provides an aggregate (general) measure of local authority. Education is included only within the Policy Scope and Effective Political Discretion variables.

The De/Centralization Dataset (DcD) (Dardanelli et al. 2019b) provides an in-depth measure of decentralization in 22 policy areas and five fiscal domains. The dataset covers 11 federations from their inception to 2020. While it includes two education policy variables, it is limited to pre-tertiary education (an aggregate) and tertiary education, and it provides only one indicator for legislation and one for administration.

## Appendix B

### IRPE and REAI Correlation

When comparing the aggregated regional powers to the Regional Education Authority Index (REAI), Figure A1 shows that countries score similarly in the two indices (Pearson correlation of 0.98). This supports the convergent validity of the IRPE at the aggregate level. There is disagreement on the case of France, which scores 0.5 in the REAI but 0 in the IRPE, and Italy, which scores 0 on the REAI but 6 in the IRPE. Disagreement over France is explained by the inclusion of regional powers over spending on upper secondary education in the REAI. This is excluded in the IRPE, which includes primary and lower secondary only. Disagreement over Italy is explained by the inclusion of variables in the IRPE (in the sub-dimensions access and school choice and standardization), which are not included in the REAI. In addition, the powers of regions to supplement resources beyond national guarantees result in a higher score for resources in the IRPE than the equivalent (scope) in the REAI.



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

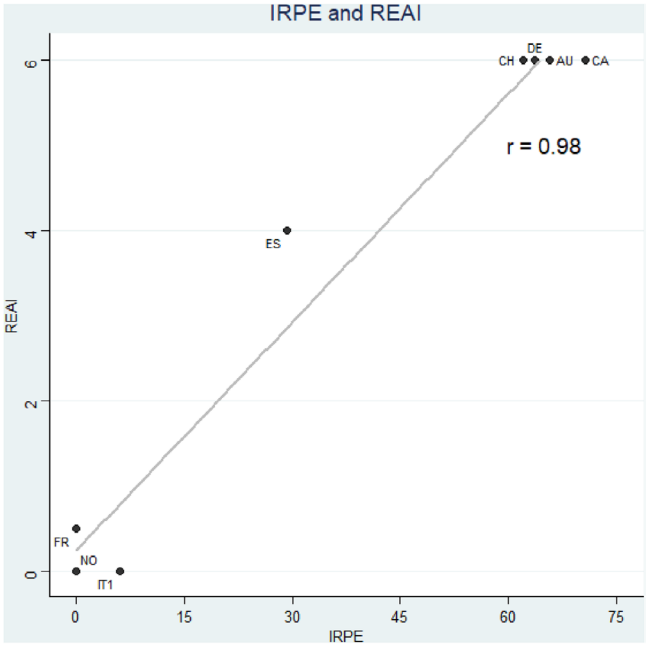


**FIGURE A1** | IRPE and REAI correlation. Scores for the REAI include primary and secondary only, thereby aligning with the IRPE. Excludes special statute regions in Italy.

One of the main advantages of the IRPE over the REAI is that the IRPE measures not only aggregated powers but also powers over a wider range of variables. As illustrated in Figures 2–4 in the main text, regional powers vary when disaggregated, uncovering interesting patterns that can be explored in future analyses.



15410072, 2026, 4, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/psj.70181 by NICE, National Institute for Health and Care Excellence, Wiley Online Library on [23/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License