Policy instruments for educational governance:

A comparative investigation of India and China

Yan Yifei

Lecturer in Public Administration and Public Policy
University of Southampton

Abstract

As the emphasis of education reforms around the world has increasingly shifted from expanding schooling access to improving student learning outcomes, the policy instruments used in educational governance has accordingly proliferated in order to fulfill this more complicated and challenging policy goal. Despite a growing body of knowledge on various specific instruments, there lacks a synthesized picture with which to inform a systematic understanding of the broad range of policy instruments being deployed, how they function and with what impact. To fill the gap, this chapter applies Christopher Hood's NATO framework to comparatively examine the informational, regulatory, fiscal and organizational instruments used in India and China, countries with two of the largest basic education sectors in the world. The results show that while each of the four key resources (nodality, authority, treasure and organization) have been actively mobilized, the configuration of individual instruments, and therefore the full policy portfolio, can be markedly different in the two systems. This digested knowledge provides a timely stock-taking of a scattered empirical literature, which also serves as a valuable starting point for future research to advance the understanding of instrument choice and policy effectiveness.

Key words

China; Comparative education; Educational governance; India; Policy design; Policy instruments; Policy tools

Introduction

With remarkable progress on universalizing basic education over the past few decades, the goals of education policies and reforms around the world have increasingly shifted towards improving its quality and equity for all, as exemplified in the fourth sustainable development goal (SDG4). Whereas building new schools or adding other inputss has contributed greatly to the expansion of schooling access and attendance, meeting these imperatives on improving student learning outcomes requires more

sophisticated efforts in educational governance to ensure that fiscal, physical and human resources are effectively managed and utilized (Yan 2019a). To date, research has focused extensively on the various actors involved in educational governance, from international to local levels and both within and outside the government (e.g., Bruns et al. 2019; World Bank 2017). Substantial knowledge has been created regarding their power, incentives or ideologies and how these characteristics have affected education policymaking and outcomes. However, from a policy design perspective, it is equally crucial to scrutinize the policy tools or instruments as the "actual means or devices that governments make use of" in attaining specific policy goals and objectives (Howlett et al. 2009; Bali et al. 2021). This is not only because government remains a key actor whose role in educational governance is unlikely to be replaced altogether despite the emergence of alternative actors and—along with it—varieties of hierarchical, market-based and network governance modes (Capano et al. 2015). More importantly, what an education system *possesses* as resources and what its actors *believe* needs to be translated concretely into the public action it takes in order to achieve the social change it aspires.

Within the literature on policy instruments, existing research from the education sector has mostly scrutinized one single instrument or one type of instrument at a time. Examples include financial instruments such as public subsidy for private schools (Zancajo et al. 2022), "data-intensive instruments" like national large-scale and high-stake exams (Burdett 2017, Verger et al. 2019), accountability instruments such as teacher performance pay (Hannaway and Woodroffe 2003), to name a few. In contrast, few studies so far have provided a synthesized account of what they are, how they function and what effect they produce. While partly reflecting a gap of the policy instrument literature in general (Capano and Engeli 2021), this empirical lacuna is still surprising when considering that one of the seminal contributions towards a systematic understanding of policy instruments is from the basic education sector (McDonnell and Elmore 1987).

To fill the gap mentioned above, this chapter takes a "structured, focused comparison" approach, which is considered appropriate for addressing "standardized questions of selected cases over a historical period of interest while focusing solely on information relevant to the research objectives" (George and Bennett 2005, cited from Smith and Joshi 2016). More specifically, the question this chapter aims to address is: what are the policy instruments used in the governance of basic education in China and India? These two countries are purposively selected for this largely exploratory enquiry. The main reason is that existing research on education policy instruments has either presented a global picture (Verger et al. 2019) or focused primarily on developed countries (e.g., Hannaway and Woodroffe 2003; Zancajo et al. 2022). Zooming into the instrument portfolio of the basic education systems of two largest developing countries in the world is therefore expected to offer a timely addition to this literature. It also contributes directly to the emerging literature on comparative educational governance of these two countries (Smith and Joshi 2016; Yan 2018; Yan and Saguin

2021).

The next section introduces the policy instrument typology developed by Christopher Hood (Hood and Margetts 2007) as the conceptual underpinning for answering the research question. Known as the NATO framework for its categorization of nodality, authority, treasure and organizational instruments based on different resources a government can put in use, it is justified as a comprehensive and reliable heuristics through which existing knowledge on a diverse set of education policy instruments in China and India can be meaningfully synthesized.

Guided by this typology and drawing on an extensive review of secondary sources including journal articles, policy documents, book chapters and working papers of leading think tanks, the chapter continues to present a comprehensive overview of what is known about the instruments deployed in the educational governance of India and China from mid-1980s till the recent outbreak of COVID-19. The timeline is chosen as mid-1980s marks the beginning of basic education reforms in both countries (Yan 2018). As for the policy instruments that specifically respond to the situations arising from the ongoing pandemic, in light of the more challenging policy aim of "building back better" as compared with improving education outcomes in a pandemic-free scenario, a separate overview will be necessary to do full justice to this important topic. Not only is this beyond the scope of this chapter, but a thorough review for that matter is difficult as existing research on these tools is much scarcer and still accumulating. Building on the contextualized and nuanced understanding thus generated on how the two systems have utilized what kind of resources to complete major tasks in educational governance, the penultimate section reviews existing evidence on the impact of these instruments on education outcomes and discusses how future research can fill the gaps identified. The final section concludes.

Digested knowledge on this topic contributes a timely addition to both the general literature on policy instruments and the still-emerging literature on educational policy instruments. According to a recent systematic review (Acciai and Capano 2021), only 15% of empirical literature on policy instruments has operationalized a whole instrument typology to systematically scrutinize instrument use in a given sector. The number of articles on education policy is even smaller, which mostly focused on tertiary rather than basic education. Practically, lessons of policy instrument use from two basic education systems in the developing world may also be more relevant for other developing countries facing similar issues and challenges. With few exceptions, examples of "high-performing education systems", from which lessons are often derived, are typically from developed countries (such as Singapore or Finland). If their stellar performance is explained along the lines of resource abundance or social norms, then the insights developing countries can draw upon in formats amenable to policy interventions would be highly limited. In that light, experiences of education policy instrument use from India and China offers a promising alternative starting point for future research to investigate in more depth how various tools can be

deployed and coordinated to jointly produce desired education outcomes.

Policy instruments and typologies

Whether conceptualized as neutral and objective methods or devices imbued with ideological or political considerations (Hood 2007), policy instruments have become increasingly central in public policy as a means to achieve policy goals (Acciai and Capano 2021). As the goals of education policy has gradually shifted from expanding schooling access to improving learning outcomes for all students, so has the portfolio of education policy instruments expanded beyond the exclusive reliance on financial instruments such as investment in infrastructure and other inputs. This expansion is in line with the rapid emergence of alternative actors in the sector too, which necessitates the government to pivot into playing a steward role in aligning and coordinating the varying interests of these stakeholders (Yan 2019a). Not surprisingly, in addition to the examples mentioned in the Introduction, an even larger body of empirical research has studied this wide range of measures that aim to strengthen various aspects of quality, equity and accountability of education, though not many have explicitly referred to them as policy instruments.

While these studies have significantly advanced our understandings on the effect of specific individual policy instruments (for a synthesis of evidence from developing countries, see Masino and Niño-Zarazúa 2016), much less stock has been taken on the broad range of policy instruments in a given context in terms of what they are and how they are designed and implemented. However, developing such a holistic picture would not only serve as a much-needed basis for governments to acknowledge the policy mix or "toolbox" at their disposal, but it also builds a ground for more in-depth analysis of the complementarities among various instruments and how they can interact effectively in a policy mix (Bali et al. 2021). This, in turn, is of great practical importance for informing a coherent and coordinated policy instrument design and deployment.

In light of the increased complexity of governance tasks and multiplicity of governance actors, a starting point for making sense of the proliferating policy instruments is through typologies. Typologies "put order on policy reality [by] sorting out, ordering and classifying the broad range of multidimensional elements through which governments put words into action" (Capano and Engeli 2021). As one of the seminal examples, McDonnell and Elmore (1987) proposes four types of policy instruments based on the implementation research in education policy. Within this typology, mandates refer to command and control regulations while inducements refer to transfer of money in return for desired actions. Capacity-building involves transfer of money too, but "with the purpose of investment in material, intellectual or human resources." Finally, system-changing instruments refer to transfer of "official authority among individuals and agencies in order to alter the system".

Though widely cited afterwards, very few research has followed its path and applied the typology to present a rich and conceptually solid inventory of policy instruments within an education system. For instance, later works examined marketization, performance-based rewards and sanctions, and high-stake exams as illustrations of specific tools used for improving student learning outcomes (e.g., Hannaway and Woodroffee 2003; Burdett 2017), yet without a thread with which to logically put individual instruments into a larger picture as McDonnell and Elmore (1987) did. Part of this limited application is attributable to the demanding requirement of information imposed by this typology in order to shed light on the links between resources, problems and expected effects (Capano and Engeli 2021). How system-changing instruments can be reliably and consistently interpreted across different systems is also questionable (ibid).

The NATO framework (Hood and Margetts 2007) is an alternative typology that can be considered for guiding an orderly and comprehensive overview of policy instruments in particular education systems. Similar to McDonnell and Elmore (1987), it categorizes policy instruments with a core focus on the resources governments have at their disposal. Within this framework, nodality instruments are based on the government's "property of being in the middle of an information or social network". Authority-based instruments, by definition, rely on government's possession of legal or official power. Treasury tools are backed by government funds, whereas organizational tools are made possible by the government's "possession of a stock of people with whatever skills they may have, land, buildings" and so on.

Resource-based approach is generally suited for scrutinizing educational governance, which is about how various types of resources are used and managed. A substantially different criterion for categorizing policy instruments is the "drivers" of expected behavior or effects (Capano and Engeli 2021). A classic example of policy instrument typology developed along this line is Schneider and Ingram (1990), which aims at causally explaining instrument choice and effectiveness in eliciting expected change through the lens of behavioral assumptions on the targets underlying different policy instruments. Compared with this approach, resource-based conceptualizations are more appropriate for analytical goals that are descriptive (Capano and Engeli 2021). Given the lack of a comprehensive stock of the fragmented education policy instrument literature as commented in the beginning of this section, the NATO typology is therefore deemed apt for answering the largely descriptive research question posed in the Introduction. Furthermore, compared with potential confusions that may arise from identifying and classifying "system change" instruments in the McDonnell and Elmore (1987) typology, the NATO framework "allows for less room for maneuver in the classification [as] the four types of resources are rather universal and can be found across a large number of systems" (Capano and Engeli 2021).

This (or any) framework is not without limitations though. Not least, as categories are not mutually exclusive, researchers have to make a judgement between the major

versus minor resources being mobilized in order to justify an instrument's being classified into one category rather than another. Yet after taking into account trade-offs concerning methodological parsimony, reliability, analytical goal and comparative scope, the NATO typology can still be considered as appropriate for what the next section is set out to do.

Education policy instruments in China and India: A comprehensive overview

In this section, the NATO framework is engaged to guide the overview of the nodality, authority, treasure and organization-based policy instruments used for educational governance in China and India. While the overview intends to be comprehensive, it cannot be equated with being exhaustive: as both education systems are characterized by considerable internal diversity, it is difficult, if not impossible, for this section to go through every single instrument practiced in every part of the two countries. Particular attention is instead paid to various policy instruments pertaining key tasks of educational governance (e.g., World Bank 2017; Saguin and Ramesh 2020), such as tracking student progress, setting standards for basic roles and responsibilities, introducing and strengthening accountability, incentivizing and supporting teachers, and soliciting contributions from alternative stakeholders at the local level or beyond the public sector. In contrast, the narrower range of instruments used exclusively for the purpose of universalizing basic education will not be zoomed in equal depth, as they were already analyzed elsewhere (see Yan 2018). Moreover, with an exclusive focus on educational governance, how interventions from other sectors (such as public health, see Qin et al. 2022) or broader socioeconomic institutions (e.g., China's household registration or *Hukou* system, see Xu and Wu 2022) may have an impact on education outcomes is likewise beyond the scope of this overview.

Nodality Instruments

National large-scale assessments

In the NATO framework, the gathering and dissemination of information is treated as a distinctive type of policy instruments which highlights nodality, or the property of government being in the middle of social networks, as a key resource at its disposal (Hood and Margetts 2007:21). Among others, standardized large-scale assessments is a nodality instrument that is directly related to the task of tracking and making sense of student learning progress and outcomes (Verger et al. 2019), although this or other types of data also serves as essential inputs for virtually all other instruments, especially under an advocacy for evidence-based policymaking. Those exams at the end of the basic education cycle are often considered high-stake too, in the sense that the results would largely determine a student's progression into the next level of education. The Chinese version of this assessment is the middle school exit exam (*Zhongkao*) taken by students at Grade 9 upon the completion of nine years of

compulsory education. Its equivalent in India is known as "board exam", of which the exam by the Central Board of Secondary Education (CBSE) at Class 10 is a typical example.

How this information of exam results is reported and treated is quite different in these two countries though. In China, rewards to students or teachers are often based on student scores and rankings. In India, CBSE only reports the pass rates in different states (Kingdon 2007). In some states like Delhi, official appreciations are awarded to those schools that have achieved 100% pass rate (Yan 2019b). Meanwhile, both countries have sought to depart from the overreliance on tests scores as the sole indicator of student learning. In Beijing, this departure was attempted through allocating enrollment quotas of high-quality "demonstrative high schools" to average middle schools that have no affiliation with them, so that graduates from the latter now have a higher chance of attending the former than if enrollment decision were entirely based on *Zhongkao* exam results. The approach taken in India is known as the Continuous and Comprehensive Evaluation (CCE): since 2009, the *Right to Education (RTE) Act* stipulated the replacement of high-stake exams in Classes 6 to 9 with evaluations which are both comprehensive (covering both summative and formative dimensions) and continuous (throughout the year). Teachers' ability to implement this alternative instrument at the classroom level was nevertheless heavily constrained by the large class size, lack of appropriate training, increased workload and so forth, as evidenced from a survey of government schoolteachers in Delhi (Singhal 2012). Nor were parents well informed and convinced of the rationale behind introducing CCE (Bhatty et al. 2015). The efficacy and sustainability of this interim lowering of exam stakes becomes more dubious when considering that the exams at the next level (board exam at Class 10/12 in India and college entrance exam or *Gaokao* in China) remains high-stake in determining students' progression into higher education.

Data availability and quality

Apart from high-stake exams, an extensive amount of school-level information, from infrastructure and facilities to student enrollment and retention, has been collected in India since 2002 after the launch of Sarva Shiksha Abhiyan (SSA or Education for All Movement), a Centrally Sponsored Scheme (CSS) that aims to universalize elementary education. The resultant District Information System for Education (DISE), together with a variety of other data portals at the central and state levels, makes the status and progress of the education system regularly trackable. In contrast, nation-wide learning achievement data was not available till 2006, when the survey report of Grade 5 children's aptitude on reading and math by the NGO Pratham and results of a similar test conducted by the National Council of Educational Research and Training were published respectively (Kingdon 2007).

In China, a National Assessment of Education Quality (NAEQ) is under

development that aims to "diversify evaluation approaches and reduce the number of exam and score-oriented practices" (Piattoeva et al. 2018:119). A key difference with data infrastructure in India, or even other data sources in China such as the *China Statistical Yearbook*, is that so far, NAEQ is only available to the highest levels of Ministry of Education. Lower levels of government, the media, the public and researchers are denied direct access, for fear that it may encourage naming and shaming. Instead, data is aggregated and released to the county level to allow county governments to benchmark their performance against national average or over time (ibid:123-124). A recent review article also comments on the unavailability of student achievement data and school-level information nationwide, which prevented the calculation of education cost and production function to determine the adequacy of education financing (Huang et al. 2021).

Compared with availability, it is the quality and reliability of official data that receives more criticism in India. Bhatty (2014) notes that the DISE data in practice has to be collected, with centrally designed format filled, by teachers outside their normal teaching responsibilities. Not only is data collected without verification, but the subsequent process of simple aggregation also largely disregards complex ground realities. Discrepancies across different datasets are also identified, which can lead to contradictory evidence on issues such as out-of-school children and learning outcomes (Bhatty 2018). Much less has been commented about the quality of specific data in China. A key difference from its Indian counterparts is that education authorities from central to provincial and county levels in China have installed a designated and specialized apparatus for data analysis. Even at the school level, the practice of "teaching research groups" involves the collection and sense-making of locally relevant student and school information for collaborative problem-solving (e.g., Sargent and Hannum 2009).

Authority-based Instruments

Foundational legislations

As the most common type of authority-based instruments, "regulation is a prescription by the government that must be complied with by the intended targets." It can be in the format of rules, standards, laws, and so forth (Howlett et al. 2009: 119). In the educational governance of China and India, regulatory instruments used are either related to the task of securing essential inputs or specifying the roles and responsibilities of key stakeholders.

One of the most foundational legislations on education policy in China is the *Law of Compulsory Education (LCE)* which first took effect in 1986 and was later revised in 2006 and 2018. Although the nine years of compulsory education was supposed to be tuition-free since the *LCE* first took effect in 1986, it was the 2006 revision that explicitly stipulated the financial guarantee as state responsibility (Art.42). To further

alleviate urban-rural disparity on the affordability of education, free compulsory education reform for rural areas was introduced in the same year by the State Council (Xiao et al. 2017). In India, it was until 2009, over two decades after NEP1986, that the *RTE Act* was passed. Apart from the general promise of free compulsory education as a right for every child, a more explicit attempt to improve equity was reflected in its requirement that 25% of enrollment in private schools be reserved for children of economically weaker sections and disadvantaged groups.

While these legislations are instrumental for the realization of the two countries' respective constitutional commitments to free and compulsory basic education, there are substantial differences in terms of their approaches to safeguarding such rights. China's *LCE* contains a specific chapter on legal liabilities (Chapter 7), under which parents can be prosecuted and teachers, schools and local authorities be administratively penalized for non-compliance. This strict and enforceable legal safeguard was considered as a key to China's tackling the issue of school dropouts (Smith and Joshi 2016:149). In contrast, a lack of similar stipulation on parental accountability in India was criticized for making some parents reluctant to send girls to school (Siddhu 2011).

Instead, the *RTE Act* contains specific and rigid requirements on student-teacher ratios, infrastructures and facilities, items which are largely left to local discretion in the Chinese system. While it marks the first time in which parameters for a regular school of minimal quality were laid out (Bhatty 2014), the cost of ensuring compliance through monitoring and inspections would accordingly increase, whereas local contexts are rarely paid heed to. In one of the few studies of how inspections were conducted on the ground, Bhatty and Saraf (2016) notes that frequencies of monitoring varied substantially across states and between urban and rural areas. At the extreme, some schools did not receive any official visit at all for the studied period. Although a large number of formats were filled as part of the monitoring process, very few crucial information on student learning was covered (see also Aiyar and Bhattacharya 2015). Nor was it common for inspection results to be discussed and deliberated, not to mention taking follow-up actions to address the issues identified.

Recruitment and management of teachers

Teacher eligibility, recruitment and career progression is another area that tends to rely on the use of authority-based resources. In China, the *Teacher's Law* passed in 1993 is the specialized legislation that outlines the required qualification of teachers as well as their recruitment and assessment at the school level. In 2006, the revised *LCE* further requires that a tenure system of teachers be uniformly established at the national level (Art.30), which is later realized through the issuance of the *Guiding Opinion on Deepening the Reform of Professional Cadre System of Primary and Secondary School Teachers* by the Ministry of Education and the Ministry of Human Resources and Social Security in 2015. This new system has united the previously

separate ranking schemes for primary and secondary school teachers into one that covers both urban and rural areas. Under this system, teachers are classified into five ranks: senior, associate senior, associate, assistant and entry-level. Notably, the "senior" cadre is introduced for the first time, making it possible for school teachers to enjoy the same professional status as university professors.

Career progression in this system can accordingly be described as a "horizontal path", in which primary, middle and senior secondary schools are treated as independent of one another (Yan 2019b). Besides promotion from one professional rank to the next, there are also within-rank promotion along various sub-categories known as "advancement of category" (*Jindang*). The number of promotions available for each rank is normally determined and announced by the educational authority at the county level. Teachers who have passed a minimum threshold are all eligible, for which an annual performance evaluation is used to rank these candidates along the lines of student test scores, work ethic and attitude and so forth (Karachiwalla and Park 2017). Compared with other types of policy instruments, the impact of teacher promotion systems has received much less scrutiny. The first empirical study on this topic reveals that in Gansu Province, teacher performance improved as the teacher got closer to the year in which she was eligible for a promotion, but declined when the number of competitors for promotion increased (ibid).

In India, recruiting teachers and setting the eligibility criteria is usually the responsibility of state governments. This largely reflects the status of education as an item on the Concurrent List of the Constitution, the responsibility for which is accordingly shared between central and state governments. In most states, this involves nationally regulated degree requirements and a qualification exam known as the teacher eligibility test. Unlike the Chinese case in which examination often includes teaching demonstrations, this written exam is the sole criterion on which hiring decisions are based in most states in India. Subsequent appointment and transfer decisions are similarly made at the state level. Lastly, teacher cadre system in the Indian typically consists of primary teachers (PRTs, teaching Class 1-5), trained graduate teachers (TGTs, teaching Class 6-10), and post-graduate teachers (PGTs, teaching Class 11 and 12). Unlike the "horizontal path" of teacher career progression in China described earlier, teacher progression in India essentially follows a "vertical path", in which promotion means having to move to teach secondary schools from primary ones, and senior secondary from lower secondary (Yan 2019b).

It should be noted that these career progression arrangements apply primarily to regular civil-service teachers, whereas both countries have made extensive hiring of contract teachers alongside this regular workforce. Despite the different names in which they are known, these teachers are usually less qualified and earn much lower salary and other benefits, even though their workload and tasks may not see substantial difference from that of their regular-teacher counterparts. In China, substitute teachers (*Daike Jiaoshi*) are mainly hired for schools in rural and remote

areas as a means to mitigate teacher shortage there. With a national drive to upgrade teacher quality, these teachers were either incorporated into the regular teacher workforce or dismissed. The percentage of substitute teachers in China's rural primary schools has accordingly declined from 13.7% in 1999 to 4.4% in 2010, although in some poorer western provinces, this figure remains above 10% (Lei et al. 2018:304). A longitudinal study of three western provinces shows that gains in student scores are less in classes taught by contract teachers than in those taught by civil-service teachers (Lei et al. 2018). But overall, research on the issues and impact of substitute teachers is quite rare (Robinson and Yi 2008).

The hiring of contract teachers in India has been much more pervasive: for elementary schools, the percentage of contract teachers in total teacher workforce rose to 12.2% in 2011-12 from around 7.1% in 2003-04, and then fell back to 7.3% in 2012-13 at about 0.5 million (Beteille and Ramachandran 2016). The scenario is quite complicated too, as these teachers can be hired at the village (through Village Education Committees or VECs, as in Uttar Pradesh), block (as in Madhya Pradesh), district (as in Andhra Pradesh), or even state levels (as in Delhi). Still others are hired through the funding of such CSS programs as the abovementioned SSA. Extensive research on this topic have largely demonstrated the cost-effectiveness of this measure (e.g., Muralidharan and Sundararaman 2013). However, even as contract teachers on average are found to have higher attendance and activity record than their regular-teacher counterparts, their effort level remained low in absolute terms (Goyal and Pandey 2013). This, together with inferior salary, insecure tenure, poor work conditions and inadequate training and career support, has led to serious concerns over the long-term implications of this instrument on improving education quality (Chandra 2015). While some states have made progress in regularizing this workforce through teacher collective action and public interest litigation, others are yet to start reviewing this practice (Beteille and Ramachandran 2016).

Treasure-based Instruments

Patterns of education financing

Treasure-based instruments rely on government's financial resources and ability to raise and disburse funds (Howlett et al. 2009). As basic education is listed as free and compulsory in their respective legislations mentioned above, government schools in the two countries are not allowed to collect tuition fees from the students. Therefore, in principle, government funding should be the only financial resource available to the government schools. To safeguard this principle, China's *LCE* further requires local governments to ensure that school-age children be enrolled in schools near the places of their registered residence. Since 2003, the central government has issued multiple prohibitions for school choice fees. But unlike punitive measures prescribed in foundational legislations, most of these prohibitions were in the non-binding forms such as "notice", "guidelines" or speeches of senior officials. As school quality and

prospects of entering better high schools and ultimately universities still vary markedly, school choice fees in the format of "donations" or "sponsorship fees" remain rampant in practice (Wong 2006; Wu 2012), making them a *de facto* alternative revenue source for key schools.

More generally, the central governments of both countries have long under-invested in basic education (Yan 2018). Yet the levels to which primary financing responsibility fall on are quite different. In China, schools have been funded mainly at the county level since 2001 (Huang et al. 2021), reflecting a "recentralization" of fiscal responsibilities from the township level (below county) that was the default under the 1994 tax reform (Zhao 2009). To further mitigate the negative impact of "excessive decentralization", the central government launched two rounds of "Compulsory Education Project in Poor Areas" from 1995 to 2005. Under this project, a total funding of 8.9 billion from the central pocket was committed (ibid). In 2005, the State Council called for further "sharing education finance between central and local governments" (Lin 2013), which was operationalized in the subsequent free compulsory education reform in rural areas as such that the central government covered 80% of funding for rural areas of western provinces and 60% for central provinces. The coverage for eastern provinces was instead determined by local government's fiscal responsibility (Xiao et al. 2017). Despite that, with county and township still contributing around 80% of total public expenditure to basic education (Yang 2013:108), education financing in China may be more decentralized in practice than in official documents (Lin 2013).

In contrast, 80% of social sector spending in India, including on basic education, comes from state budgets since 1990s (Dongre and Kapur 2016). Like its Chinese counterpart, the central government in India plays a supplementary role in education financing, mainly through CSS programs which address specific tasks or missions. Recent examples include SSA, Rashtria Madhyamic Shiksha Abhiyan (RMSA or National Missions for Secondary Education that aims to universalize secondary education) and Mid-day Meals (to provide free midday meals to all elementary school students). Although the funding sources of earlier CSS programs used to include international organizations and donor agencies, it was the federal government that had the strongest control over the terms and conditions of CSS configuration (Colclough and De 2010). After terminating many ongoing cooperation with major donors in 2003, the federal government introduced an annual education cess (2% on all central taxes which was increased to 3% in 2007, Kingdon 2007) exclusively for elementary education. Notwithstanding this new instrument at the central level, requirements imposed on state governments to provide a minor amount (usually not exceeding 25% of total cost) of matching grants by many CSS programs still resulted in delay and under-utilization of funds due to issues and tensions on coordination (Jha 2007; Jha et al. 2008).

Performance pay

Performance pay/bonus is another treasure-based instrument, for which government disburses funds additional to the basic salary of teachers in hope of strengthening teacher accountability through a closer pay-performance link. In China, the *Guiding Opinion on Compulsory Education Schools' Implementation of Performance Pay* issued by the State Council in 2009 is the first official document that offers concrete guidance for fulfilling the prescriptions by the *Teacher's Law* on basing teacher pay rise on certain results assessment (Art.22). As this policy was issued in the format of recommendation rather than hard regulation and with provincial authorities as the main funder, the practice and effectiveness of this instrument may vary by regions. Karachiwalla and Park's (2017) study on Gansu Province shows that average teacher salaries increase was closely tied to promotions, for which they described with the term "rank-level premiums". Teachers were found to exert more effort, as measured by annual evaluation scores, when the premiums were higher. Xue and Wang (2016) finds that teacher performance bonus had positive and significant impact on improving student math scores in a central and a coastal province respectively, for which collective bonus had greater impact than that tied to the performance of individual teachers. How the design of these schemes matters is further explored in an experimental study in two western provinces. Its findings show that compared with rewarding teachers by class-average achievement levels or gains, the "pay-for-percentile" design that rewards them based on the rankings of individual students had the greatest impact on student achievement in math exams. In contrast, the size of the rewards did not have any significant impact (Loyalka et al. 2019). Two qualitative case studies conducted in Shanghai further reveal that whereas performance pay was perceived by policymakers as a means to improve teaching quality, teachers saw it more as a way to encourage their enthusiasm and raise their satisfaction. They also experienced an increased workload under the reform (La Londe 2017; Wang et al. 2014). The discrepancy or even tensions between what the policymakers or schools want and what the teachers want and perceive as good for them may thus constrain the capacity of this tool in sustaining strong incentive for performance.

In India, this instrument was only experimented in Andhra Pradesh in 2005. Evaluation of this experiment found that students in incentive schools performed significantly better than those in control schools (Muralidharan and Sundararaman 2011). Though equally effective in the first year of the experiment, individual teacher incentives significantly outperformed group-based bonuses five years after the trial (Muralidharan 2012). Overall, teacher salary in India is predominantly determined by experience and union membership rather than teaching performance (Kingdon and Teal 2010). As financing the performance-pay program achieved greater impact on raising student performance than parallel input-based interventions at a cost that was 25% lower than the latter (Muralidharan and Sundararaman 2011), how this cost-effective instrument can be scaled up deserves more in-depth investigations.

Organization-based Instruments

Government and Private Schooling Provisions

Amongst the variety of policy instruments available to the government, direct provision of goods or services through public organizations remains a most basic and widely used example (Howlett et al. 2009:126). For the majority of students in India and China, and especially those from lower socioeconomic backgrounds, government schools are still their primary option for getting educated. Despite the rarity of using vouchers to facilitate school choice in both countries (see Karopady (2014) and Muralidharan and Sundararaman (2015) for an example from Andhra Pradesh in India), choice in a broader sense is increasingly available in both countries with the rapid growth of private schooling. This is much more so in India than in China: whereas China had roughly over 10% of middle school students in private schools by 2010, the figure at secondary school level in India at the same period was 42% (Smith and Joshi 2016). A growing number of these private schools in most states in India are "low-fee" ones, whether benchmarked against per capita income, per-pupil government expenditure or rural minimum wage (Kingdon 2020).

As the extent of private provision is much higher in India, there are accordingly more research that compares private versus government schooling. A recent review highlights that from 2010-11 to 2014-15, student enrolment in government schools fell by 11.1 million, in contrast to the increase of private school enrollment by 16 million (Kingdon 2020). Regarding the supply side, Muralidharan and Kremer (2009) reports that a disproportionately large number of private schools are located in areas with poorly performing government schools. This finding can be triangulated with the National Sample Survey data in 2017-18, which shows that quality of education (35%) is the most highly cited reason why parents choose to send their children to private schools, to be followed by convenience of location (22%) and English medium of instruction (16%). Scrutinizing the demand side, Kumar and Choudhury (2021) estimates that children from wealthier, upper-caste Hindu families with higher parental education levels have a higher likelihood of attending private schools. Female children, on the other hand, enjoy significantly lower chances of attending private schools compared with their male counterparts. This suggests that simple comparison of learning achievements between government and private school students could shed a partial and even misleading light on the true benefits of attending private schools, which can differ significantly along different socioeconomic status and identity markers (Karopady 2014).

There are exceptions to the perceived superiority of private schools too. Notably, government schools in Delhi have consistently outperformed private schools in CBSE XII exams over the past few years. An earlier comparative study (Mangla 2015) also shows how Himachal Pradesh, a hilly state in the Himalayas, managed to achieve one of the highest student attendance and best student learning outcomes in the country

through a similar "public-sector approach" taken by China (Smith and Joshi 2016). It should be noted that under the umbrella term "private schools", great variety exists in India depending on whether these schools receive government aid or recognition. Yet due to the limitation of official data (Kingdon 2020:1797), a more nuanced analysis of different sub-categories of private schools is not available.

(De)centralization and School-based Management

Within the government school system, both countries have endeavored to decentralize educational governance in order to mobilize contributions from various local stakeholders. For example, District Institutes of Education and Training (DIETs) were introduced in India in the hope of offering training, other academic resources and action research that are more closely aligned with local needs than what was available at national and state levels (Dyer 2005). After the Constitutional Amendments of 1992 consolidated the principles of local self-governance, the launch of District Primary Education Program (DPEP) in 1994 marked the first time in which power of education planning was granted to an administrative unit below the state. The program was found to have substantial impact especially for low-caste children (Kingdon 2007). Autonomy was further granted down to the village level, of which the Village Education Committees (VECs) are envisioned as an interface between school and community (Rout 2013). VECs are expected to monitor teacher work and student enrollment and prepare for the village education plans (Jha et al. 2008). Lastly, school-based management in India is mainly practiced through the institutionalization of the School Management Committees (SMCs) as mandated by the *RTE Act*. How SMCs should be organized and what functions they should perform is nevertheless subjected to state-specific interpretations.

In China, the process of educational decentralization started in 1985 with the issuance of *Decision on Reforming Chinese Educational System*. In addition to fiscal decentralization as mentioned earlier, curriculum development, textbook compilation and so forth has been variously decentralized to different local levels (Wong 2006; Qi 2011). The most salient example of education decentralization is arguably the "Principal Responsibility System" at the school level. In this system, the principal acts as the legal person of the school who reports to education authorities and deal with other entities on its behalf. Schools enjoy autonomy of recruiting students and teachers, setting up teaching plans, overseeing finance and assessing and rewarding teachers financially or otherwise. According to the *Teacher's Law* (Art.37), schools are even allowed to dismiss teachers on disciplinary charges, an autonomy that is not enjoyed by SBM bodies in India. Indeed, even as VECs are granted the power to disburse the salaries of government teachers and thereby monitor teachers through a "No Work, No Pay" principle (Rout 2013:90), neither them nor the head teacher are authorized for firing teachers for which only state authorities have the power (Mooij 2008).

Notwithstanding these decentralization initiatives, higher-level governments in both countries still have substantial power over how decentralization is practiced (Yan 2018). In addition to the example of firing teachers, the appointment of teachers in India similarly needs to go through higher-level authorities even if the recommendation is made at the village level (Mooij 2008). Nor is the decentralization trend irreversible. A latest example from China is that starting from September 2017, compilation of textbooks on Chinese language, History and Morality and rule of law subjects became recentralized again to the Ministry of Education after decades of local alternatives.

Merger and Consolidation of Government Schools

As the size of government schools have shrunk substantially, both education systems have gone through another reorganization process known as school merger or consolidation. In China, this reorganization was officially initiated with the issuance of *Decision on Basic Education Reform and Development* by the State Council in 2001. Mainly motivated by demographic changes, this move was hoped to reallocate education resources more economically and efficiently (Liu et al. 2010). In the next decade, the total number of primary schools decreased by more than 50% (Hannum et al. 2021:486). Using survey data from Shaanxi and Ningxia provinces in northwest China, Liu et al. (2010) shows that while no significant negative impact of the merger was found on average, this policy adversely affected the Chinese language test scores of students in lower grades of primary education. Using a household and village survey of seven provinces, a more recent investigation on the policy's long-term impact finds that it significantly reduced the grades completed by children exposed to school closure, an impact that was found to strengthen with time since the closure (Hannum et al. 2021). The negative impact was greater for girls, whose school completion may be impeded by increased distance associated with closure. For boys, by contrast, the improved quality of facilities may have served as a facilitator of school attendance (ibid). The gender dimension may further intersect with students' minority status and community characteristics in bringing significant heterogeneities in policy impacts, with minority youth in the poorest villages being affected most severely (Hannum and Wang 2022).

A policy initiative along similar rationale appeared in India a decade later than the Chinse case. In Rajasthan, one of the earliest movers in school consolidation, the number of government primary schools has declined by 30% between 2013-14 and 2016-17 (Bordoloi and Shukla 2019). The lack of school-level data has prevented rigorous impact evaluation. A mixed record is nevertheless reported on other aspects: while average numbers of teachers per school/class have increased after consolidation, thereby reducing the incidences of multi-grade teaching, there has been a worrying trend of declined enrollment especially for students with disability and from scheduled castes and tribes. The burden of inspections at the block level was also relieved at the cost of increased administrative-related workload for head teachers.

With substantial number of elementary schools lacking head teachers, administrative tasks that were supposed to be performed by them had fallen instead on teachers (ibid). Beyond the expansive roll-out of decentralization and school consolidation, a number of innovative practices in Beijing and other municipalities have sought to organize schools, geographically or otherwise, into groups or clusters to enable more flexible ways of resource-sharing and cross-learning across schools than mergers (e.g., Meng et al. 2016). A similar attempt is proposed in India's latest NEP 2020 as "school complex", in which multiple public schools can be brought together into one organizational unit as an alternative to school relocation (Bordoloi and Shukla 2019).

Teacher capacity development

Teacher in-service training is another policy instrument that requires sophisticated organizational resources for its planning and implementation. Over the past four decades, China has established a four-tier training system. Within this scheme, national-level training programs are the latest addition which, as exemplified in the National Teacher Training Program (NTTP, *Guopei Jihua*) aims particularly at supporting teachers in rural areas, thereby reducing regional inequalities. However, a recent large-scale randomized evaluation shows that there lacks a significant impact of such training on student achievement (Lu et al. 2019). Provincial- /municipal-level training mostly plays a residual role for contents that local training providers lack sufficient capacity to deliver. Such examples in Beijing cover both high (training high-caliber teachers for municipal-level competitions) and low ends (training for weak schools in remote and suburban districts, Yan and Saguin 2021). It is mainly at the district and school levels where most training, especially those regarding subject-based pedagogy, academic content, exam preparation and student management, is conducted (Yan 2019b).

In contrast, training provision in India is mainly concentrated at the state level and usually delivered by the State Council of Educational Research and Training (SCERT) of a state. In many states including Delhi, SCERT is an autonomous organization that has no affiliation with the state Department of Education, although the two in practice may work closely on the design and implementation of specific training programs. Nor is SCERT affiliated to the NCERT, its national counterpart. Indeed, these two agencies are sometimes found to confront each other over the political and ideological implications of the curriculum, especially when national and state government are led by rivaling political parties (Lall 2009). Below state, DIETs at the district level are supposed to provide locally tailored training. Yet how well they are functioning critically depends on whether they have collegial or tense relationship with the SCERT (Dyer 2005). Though introduced as a tool of decentralization, what and how training is designed and delivered by DIETs is still found to respond more to "state or national level perceptions of teacher needs" rather than listening and catering to teacher voice on the ground (ibid).

Discussion: Instrument use and education outcomes

The comparison presented in the last section shows that while each of the nodality, authority, treasure and organizational resources have been actively mobilized, great variations exist between these two systems in terms of the prevalence of a particular instrument, the level of government with which it has been most commonly practiced, as well as other features of its design, configuration and implementation. A natural enquiry that follows is whether and how these differently designed and deployed instruments have contributed to the improvement of quality and equity of student learning. As will be elaborated in this section, much more is known on the presence/absence of instrument effect (the "whether/to what extent" question) than the underlying mechanisms by which instruments function individually or as part of a policy mix in producing such impact (the "how" question).

For starter, it can be noted that there is already extensive research on education outcomes in the two countries. While both have made remarkable progress in universalizing basic education (Yan 2018), its accessibility remains a challenge for India in light of the millions of out-of-school children (Bhatty et al. 2017). Although this is much less the case for China, upon completing the nine years of compulsory education, less than half of the students in rural schools would advance to academic high schools (Qin et al. 2022). In terms of quality, the stella performance of Chinese students in international large-scale assessments such as the Programme for International Student Assessment (PISA) has made global headlines ever since the first time of Shanghai's participation in 2009 (e.g., OECD 2010: Chapter 4). In the same year, PISA results for Himachal Pradesh and Tamil Nadu, two of the best-performing states in India on basic education, were so dismal that did not even enter the ranking scale (Pritchett 2013). Yet by using international test questions and linking student results with their international counterparts, Das and Zajonc (2010) highlights that top 5% performers in Orissa and Rajasthan had such performance that was even on par with high-income countries like Norway. Meanwhile, the bottom 5% of children ranked higher than their counterparts in only three out of 51 countries. More generally, household wealth is still a major predictor of learning disparity in India (Alcott and Rose 2017), although income inequality is found to interact intricately with gender, places of residence and caste and religious identities (Agrawal 2014; Varughese and Bairagya 2020). For China, persistence of inequality on educational attainments, primarily along the lines of urban-rural divide, was widely documented (Qian and Smyth 2008; Yang et al. 2014). In contrast, much less attention was paid to the specific disadvantages faced by marginalized students such as the migrant students, partly due to the difficulty of acquiring student-level data (Huang et al. 2021).

A smaller subset of this empirical literature has attempted to assess the effectiveness of particular policy instruments against these reported outcomes. Overall, evaluation studies for both systems have presented a mixed picture. China's educational

decentralization was found to have negative impact on both urban-rural and regional equality (Zhang and Kanbur 2005; Zhao 2009). Whereas the rural free compulsory education reform of 2006 significantly improved school completion and attainment for students with longer exposure to the reform (Xiao et al. 2017), both the nationally organized training targeting teachers from rural areas and the school merger initiative failed to have significant impact on raising student performance (Lu et al. 2019; Hannum and Wang 2022). Even when scrutinizing the same policy instrument, studies using different research methods may pick up different insights. For example, evidence of quantitative studies largely confirmed the overall effectiveness of performance pay in increasing teacher efforts and ultimately student exam performance (Xue and Wang 2016; Karachiwalla and Park 2017). Yet in-depth enquiry using qualitative methods suggests that teachers' experience with and perceptions of this instrument were not entirely positive in light of the increased workload and changed nature of teacher professionalism (Wang et al. 2014). A similar observation can be made for the mass recruitment of contract teachers in India, where its overall cost-effectiveness reported by quantitative studies (Muralidharan and Sundararaman 2005) needs to be considered together with the discrepancy on career prospects and welfare entitlements experienced by these teachers as cautioned by qualitative studies (Béteille and Ramachandran 2016).

The limited availability of empirical research that directly compares individual instruments used in India and China makes it difficult to concretely assess which policy configurations work better to deliver particular outcomes. Still, Smith and Joshi (2016) shows that compared with India's heavy reliance on private schooling provision, China's greater emphasis on government provision has contributed to higher enrollment, attendance, graduation and progression rates and gender parity. Yan's (2019b) study on teacher in-service training suggests that Beijing's more frequent, regular and decentralized training provision is more likely to match with teachers' needs and expectations and accordingly raise their satisfaction, as compared with the top-down delivery of training in Delhi.

Notwithstanding this variegated picture on the impact of individual policy instruments, much less is known about the interactions amongst various types of policy instruments and how they function as an integrated policy mix. This lack of understanding both reflects a generic literature gap (Bali et al. 2021) and a more specific status of educational studies that compared with other sectors of public service delivery such as health or infrastructure, system approach in education remains largely under-developed (Mansoor and Williams 2018).

The brief review above therefore suggests that much more can be done to fully realize the potential of policy instrument research in informing educational governance scholarship and practice of the two countries, as well as other developing countries facing similar governance challenges. While it is beyond the scope of this chapter to have an exhaustive outlook of all possible directions, two of them are worth

highlighting which would shed further light on the appropriateness of instrument choice and complementarity amongst different instruments.

First, more in-depth probe on why certain policy instruments have worked or failed to work would necessitate, among others, a systematic understanding of the appropriateness of individual instrument choice. According to the model developed in Howlett et al. (2009), such choice depends on the complexity of the tasks involved and capacity constraints faced by the government. Under this theorization, authority-based instruments are an appropriate choice when the task is relatively simple and yet when government faces high constraints, because information needed to establish regulation is often less compared with other tools (ibid).

Reflected in the use of authority-based instruments in the two education systems, by regulating on the consequences of not sending children to school or not meeting basic responsibilities by teachers, schools or local governments, China's stipulations were installed to safeguard against unwanted or undesirable behaviors which are considered straightforward and universal across the country. Constraints on monitoring capacity was also eased by this design of threat-based enforcement, which will only be triggered by the violations of such stipulations. China's use of regulations to delineate basic roles and responsibilities of stakeholders in education is thus considered appropriate, the impact of which was acknowledged within the empirical literature (Smith and Joshi 2016). In contrast, the detailed specification of infrastructural and facility inputs in India's *RTE Act* essentially intends to impose desirable behaviors and elicit contributions from the regulated party. This task is supposedly more complex as instead of standardization, what is deemed as desirable needs to be contextualized upon the varying resource level and incentive structure of the schools of different types and in different regions. Ensuring compliance regardless of such complexity is accordingly more costly given the need for more regular and detailed monitoring. Taken together, the Indian case here represents a less appropriate instrument choice, whose negative implications and lack of efficiency are well pointed out (Bhatty and Saraf 2016; Datta and Kingdon 2021). Having said that, even when there is no design mismatch between tools and tasks, a threshold of policy capacity is needed to ensure instrument effectiveness and avoid governance failure (Howlett and Ramesh 2014). Indeed, without adequate enforcement capacity, China's stipulation of stakeholder roles and responsibilities would remain empty clauses on paper.

Second, as policy instruments in many education systems have been adopted separately or in a piecemeal manner, elucidating how multiple instruments need and could be synergized in an integrated policy mix becomes even more important for education policy design and practice. To illustrate, organizational instruments are considered more suitable when the task involved is complex and constraints faced by the government high. Building teacher capacity so as to better elicit their efforts and contributions is one such complex task. Government faces substantial constraints to accomplish it, as there is hardly pre-defined formula which is guaranteed to work.

Organization-based instrument of teacher training is therefore considered appropriate insofar as the capacity constraint faced by the government can be partially alleviated when the well-trained and experienced teachers are invited to share the burden of capacity building by, for instance, serving as training providers. Recruiting trainers whose expertise is more closely tied to the ground reality also helps mitigate the complexity of the task as compared with when training is imposed top-down regardless of local contexts (Yan and Saguin 2021). However, for these conditions to materialize, it is crucial for the system to signal that good teachers are valued as important assets of the system. This is achieved in China by creating a teacher promotion system whose officially stipulated criteria are closely linked to teacher performance. In that case, teacher training and promotion in China can be said as complementing one another in supporting teachers. In contrast, India's seniority-based promotion system and its vertical career path make it less likely for this regulatory tool to complement a training system that remains highlight centralized (Yan 2019b).

Beyond these examples, a fuller and deeper exploration of complementarity and coordination amongst multiple education policy instruments can benefit from a closer engagement with the latest developments in the policy instrument literature. One example is the distinction between primary tools which are central to achieving a stated objective and secondary ones which are "not expected to achieve primary policy goals but rather play a vital role in supporting primary tools" (Bali et al. 2021:6), which would allow for a closer examination of how the policy mix consisting of these primary and secondary tools work in a hierarchical order. Complementarities can also be examined between substantive tools that seek to directly target the problematic conditions and procedural ones which are "decision processes used to alter the choice or use of substantive tools" (ibid:7).

Conclusion

This chapter addresses the body of knowledge on education policy instruments which, while burgeoning, remains largely scattered. Guided by the NATO typology developed by Christopher Hood, it takes comprehensive stock of what is known about the design and deployment of policy tools in the basic education sector of India and China. Compared with the cumulative knowledge on what these policy instruments are, much less knowledge has been generated regarding the effect they produce, as summarized in the previous section. Even more scant attention was paid to understand how they function that has led to the observed effect. Future research is therefore encouraged to address the identified literature gaps by exploring, among others, whether an instrument used is appropriately matched with the task it sets out to perform, and whether it serves to complement and synergize with other instruments to jointly produce intended policy objectives. The advancement of both research directions would benefit from a more pluralistic approach to data collection and analysis: while the use of existing secondary data has the strength of informing the overall impact of instruments that are quantifiable, a better understanding of the

underlying mechanisms as well as the design features of policy instruments would require insights shared by policymakers and other key stakeholders through qualitative interviews and process-tracing.

References

Acciai, C., & Capano, G. (2021). Policy instruments at work: A meta‐analysis of their applications. *Public Administration*, 99(1), 118-136.

Agrawal, T. (2014). Educational inequality in rural and urban India. *International Journal of Educational Development*, 34, 11-19.

Aiyar, Y., & Bhattacharya, S. (2015). As the example of education shows, India's bureaucratic reforms are falling short of maximising governance. *The Caravan*. March 01.

Alcott, B., & Rose, P. (2017). Learning in India's primary schools: How do disparities widen across the grades?. *International Journal of Educational Development*, 56, 42-51.

Bali, A. S., Howlett, M., & Ramesh, M. (2021). Unpacking policy portfolios: Primary and secondary aspects of tool use in policy mixes. Journal of Asian Public Policy, 1-17.

Béteille, T., & Ramachandran, V. (2016). Contract teachers in India. *Economic and Political Weekly*, 40-47.

Bhatty, K. (2014). Review of elementary education policy in India: Has it upheld the constitutional objective of equality? *Economic and Political Weekly*, 100-107.

Bhatty, K. (2018). The Numbers Game: How well has it served the cause of education? *Economic and Political Weekly*, LIII (15), 41-46.

Bhatty, K., & Saraf, R. (2016). Does the Government's Monitoring of Schools Work? A Study of the Frontline Education Bureaucracy in India (No. 28). PAGE Working Paper.

Bordoloi, M., & Shukla, R. (2019). School Consolidation in Rajasthan: Implementation and Short-Term Effects. Delhi: Centre for Policy Research.

Bruns, B., Macdonald, I. H., & Schneider, B. R. (2019). The politics of quality

reforms and the challenges for SDGs in education. *World Development*, 118, 27-38.

Burdett, N. (2017). Review of High Stakes Examination Instruments in Primary and Secondary School in Developing Countries. *RISE Working Paper* RISE-WP-17/018.

Capano, G., & Engeli, I. (2021). Using Instrument Typologies in Comparative Research: Conceptual and Methodological Trade-Offs. *Journal of Comparative Policy Analysis: Research and Practice*, 1-18.

Capano, G., Howlett, M., & Ramesh, M. (2015). Bringing Governments back in: Governance and Governing in Comparative Policy Analysis. *Journal of Comparative Policy Analysis: Research and Practice*, 17 (4): 311–21.

Chandra, M. (2015). The implications of contract teaching in India: A review. *Policy Futures in Education*, 13(2), 247-259.

Colclough, C., & De, A. (2010). The impact of aid on education policy in India. *International Journal of Educational Development*, 30(5), 497-507.

Das, J., & Zajonc, T. (2010). India shining and Bharat drowning: Comparing two Indian states to the worldwide distribution in mathematics achievement. *Journal of Development Economics*, 92(2), 175-187.

Dongre, A., & Kapur, A. (2016). Trends in public expenditure on elementary education in India. *Economic and Political Weekly*, 23-25.

Dyer, C. (2005). Decentralisation to improve teacher quality? District Institutes of Education and Training in India. *Compare: A Journal of Comparative and International Education*, 35(2), 139-152.

Evans, D. K., & Popova, A. (2016). 'What Really Works to Improve Learning in Developing Countries? An Analysis of Divergent Findings in Systematic Reviews', *The World Bank Research Observer* 31 (2): 242–70.

Goyal, S., & Pandey, P. (2013). Contract teachers in India. *Education Economics*, 21(5), 464-484.

Hannaway, J., & Woodroffe, N. (2003). Policy Instruments in Education. *Review of Research in Education*, 27(1), 1–24.

Hannum, E., Liu, X., & Wang, F. (2021). Estimating the effects of educational system consolidation: the case of China's rural school closure initiative. *Economic Development and Cultural Change*, 70(1), 485-528.

Hannum, E., & Wang, F. (2022). Fewer, better pathways for all? Intersectional impacts of rural school consolidation in China's minority regions. *World Development*, 151, 105734.

Hood, C. (2007). Intellectual obsolescence and intellectual makeovers: Reflections on the tools of government after two decades. *Governance*, 20(1), 127-144.

Hood, C., & Margetts, H. (2007). *The Tools of Government in the Digital Age*. Macmillan International Higher Education.

Howlett, M., Ramesh, M., & Perl, A. (2009). *Studying Public Policy: Policy Cycles and Policy Subsystems*. Oxford: Oxford university press.

Huang, B., Xu, C., Wang, D., & Hu, X. (2021). Compulsory Education Finance in China. *China Review*, 21(4), 259-290.

Jha, P. (2007). Guaranteeing elementary education: a note on policy and provisioning in contemporary India. *Journal of South Asian Development*, 2(1), 75-105.

Jha, P. K., Das, S., Mohanty, S. S., & Jha, N. K. (2008). *Public provisioning for elementary education in India*. New Delhi: SAGE Publications India.

Karachiwalla, N., & Park, A. (2017). Promotion incentives in the public sector: Evidence from Chinese schools. *Journal of Public Economics*, 146, 109-128.

Kingdon, G. (2007). The progress of school education in India. *Oxford Review of Economic Policy*, 23(2), 168-195.

Kingdon, G. G. (2020). The private schooling phenomenon in India: A review. *Journal of Development Studies*, 56(10), 1795-1817.

Kingdon, G., & Teal, F. (2010). Teacher unions, teacher pay and student performance in India: A pupil fixed effects approach. *Journal of Development Economics*, 91(2), 278-288.

La Londe, P. G. (2017). A Failed Marriage between Standardization and Incentivism: Divergent Perspectives on Performance-Based Compensation in Shanghai. *Education Policy Analysis Archives*, 25(88).

Lall, M. (2009). Globalization and the Fundamentalization of Curricula: Lessons from India. In Lall, M., & Vickers, E. (Eds.). *Education as a political tool in Asia*. Routledge.

Lei, W., Li, M., Zhang, S., Sun, Y., Sylvia, S., Yang, E., ... & Rozelle, S. (2018). Contract teachers and student achievement in rural China: Evidence from class fixed effects. *Australian Journal of Agricultural and Resource Economics*, 62(2), 299-322.

Lin, T. (2013). *The politics of financing education in China*. Palgrave Macmillan.

Liu, C., Zhang, L., Luo, R., Rozelle, S., & Loyalka, P. (2010). The effect of primary school mergers on academic performance of students in rural China. *International Journal of Educational Development*, 30(6), 570-585.

Loyalka, P., Sylvia, S., Liu, C., Chu, J., & Shi, Y. (2019). Pay by design: Teacher performance pay design and the distribution of student achievement. *Journal of Labor Economics*, 37(3), 621-662.

Lu, M., Loyalka, P., Shi, Y., Chang, F., Liu, C., & Rozelle, S. (2019). The impact of teacher professional development programs on student achievement in rural China: evidence from Shaanxi Province. *Journal of development effectiveness*, 11(2), 105-131.

Mangla, A. (2015). Bureaucratic norms and state capacity in India: implementing primary education in the Himalayan region. *Asian Survey*, 55(5), 882-908.

Mansoor, Z., & Williams, M. (2018). Systems Approaches to Public Service Delivery: Lessons from Health, Education, and Infrastructure. Background paper for workshop "Systems of Public Service Delivery in Developing Countries", University of Oxford.

McDonnell, L. M., & Elmore, R. F. (1987). Getting the Job Done: Alternative Policy Instruments'. *Educational Evaluation and Policy Analysis*, 9(2), 133–152.

Meng, F., Lei Z., & She Y. (2016). Three Modes of Running Schools by Group in Elementary Education in China. *Educational Research* 37(10), 40-45. [In Chinese]

Mooij, J. (2008). Primary education, teachers' professionalism and social class about motivation and demotivation of government school teachers in India. *International journal of educational development*, 28(5), 508-523.

Muralidharan, K. (2012). Long-term Effects of Teacher Performance Pay: Experimental Evidence from India. *Society for Research on Educational Effectiveness*.

Muralidharan, K., & Kremer, M. (2009). Public-private schools in rural India. In R. Chakrabarti & P. E. Peterson (Eds.), *School choice international: Exploring public-private partnerships* (pp. 91–110). Massachusetts, USA: The MIT Press.

Muralidharan, K., & Sundararaman, V. (2011). Teacher performance pay: Experimental evidence from India. *Journal of political Economy*, 119(1), 39-77.

Muralidharan, K., & Sundararaman, V. (2013). Contract teachers: Experimental evidence from India (No. w19440). National Bureau of Economic Research.

Muralidharan, K., & Sundararaman, V. (2015). The aggregate effect of school choice: Evidence from a two-stage experiment in India. *Quarterly Journal of Economics*, 130(3), 1011-1066.

OECD. (2010). *Strong performers and successful reforms in education: Lessons from PISA for the United States*. OECD Publishing.

Pritchett, L. (2013). *The Rebirth of Education: Schooling Ain't Learning*. London: Center for Global Development.

Qi, T. (2011). Moving toward decentralization? Changing education governance in China after 1985. In *The impact and transformation of education policy in China*. Emerald Group Publishing Limited.

Qian, X., & Smyth, R. (2008). Measuring regional inequality of education in China: widening coast–inland gap or widening rural–urban gap?. *Journal of International Development*, 20(2), 132-144.

Robinson, B., & Yi, W. (2008). The role and status of non-governmental ('daike') teachers in China's rural education. *International Journal of Educational Development*, 28(1), 35-54.

Rout, G. K. (2013). Community participation in Education: A changing pattern of educational administration in India. *International Journal of Research Studies in Education*, 2(3), 85-98.

Saguin, K. I., & Ramesh, M. (2020). Bringing Governance Back into Education Reforms. The Case of the Philippines. *International Review of Public Policy*, 2(2:2).

Schneider, A., & Ingram, H. (1990). Behavioral assumptions of policy tools. *Journal of Politics*, 52(2), 510-529.

Singhal, P. (2012). Continuous and Comprehensive Evaluation: A study of Teachers' Perception. *Delhi Business Review*, 13(1), 81-99.

Smith, W. C., & Joshi, D. K. (2016). Public vs. Private Schooling as a Route to Universal Basic Education: A comparison of China and India. *International Journal of Educational Development*, *46*, 153-165.

Varughese, A. R., & Bairagya, I. (2020). Group-based educational inequalities in India: Have major education policy interventions been effective?. *International Journal of Educational Development*, 73, 102159.

Verger, A., Parcerisa, L., & Fontdevila, C. (2019). The growth and spread of large-scale assessments and test-based accountabilities: A political sociology of global education reforms. *Educational Review*, 71(1), 5-30.

Wang, L., Lai, M., & Lo, L. N. K. (2014). Teacher professionalism under the recent reform of performance pay in Mainland China. *Prospects*, 44(3), 429-443.

Wong, J. L. (2006). "The Effects of Local Interpretation of Decentralization Policy on School Autonomy in Guangdong Province of China." In *Educational*

Decentralization: Asian Experiences and Conceptual Contributions. (Ed.) Christopher Bjork. Dordrecht: Springer.

World Bank. (2017). *World development report 2018: Learning to realize education's promise*. The World Bank.

Wu, X. (2012). School choice with Chinese characteristics. *Comparative Education*, 48(3), 347-366.

Xiao, Y., Li, L., & Zhao, L. (2017). Education on the cheap: The long-run effects of a free compulsory education reform in rural China. *Journal of Comparative Economics*, 45(3), 544-562.

Xu, D., & Wu, X. (2022). Separate and unequal: hukou, school segregation, and educational inequality in urban China. *Chinese Sociological Review*, 1-25.

Xue, H. & Wang, R. (2016). Teachers' Performance Reward, Incentive and Student Achievement in Compulsory Education. *Educational Research* 5: 21-33 [In Chinese].

Yan, Y. (2018). Policy response to globalization: a comparison between China's and India's primary education. *Asian Education Review*.

Yan, Y. (2019a). Making Accountability Work in Basic Education: Reforms, Challenges and the Role of the Government. *Policy Design and Practice*, 1-13.

Yan, Y. (2019b). *Governance of government middle schools in Beijing and Delhi: Supportive accountability, incentives and capacity*. PhD thesis. Singapore: National University of Singapore.

Yan, Y., & Saguin, K. (2021). Policy capacity matters for capacity development: comparing teacher in-service training and career advancement in basic education systems of India and China. *International Review of Administrative Sciences*, 87(2), 294-310.

Yang, J., Huang, X., & Liu, X. (2014). An analysis of education inequality in China. *International Journal of Educational Development*, 37, 2-10.

Yang, L. (2013). China's fiscal decentralization and local education provision: From the fiscal autonomy ad sub-provincial decentralization perspective. Public Administration Review (in Chinese), 9(2): 104-134.

Zancajo, A., Verger, A., & Fontdevila, C. (2022). The instrumentation of public subsidies for private schools: Different regulatory models with concurrent equity implications. *European Educational Research Journal*, 21(1), 44-70.

Zhao, L. (2009). Between local community and central state: Financing basic education in China. *International Journal of Educational Development*, 29(4), 366-373.