The effectiveness of equity funding policies in schools in Europe and North America: A systematic literature review

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There is some scepticism about the effectiveness of equity funding policies (EFPs). However, many studies focus only on one particular EFP in one education system. The present paper draws lessons from a review of the North American and European literature. In general, EFPs did not always meet the expectations of policymakers and educational agents. Five potential causes emerge from our review: (1) Matthew effects in the baseline resourcing of schools; (2) the ineffective use of additional resources; (3) ineffective targeting; (4) flaws in monitoring and evaluation; and (5) the general social and educational context in which EFPs are implemented.

Introduction: A bird's eye perspective

Education is considered one of the most effective tools in fighting poverty and facilitating upward social mobility (Leuven, Lindahl, Oosterbeek, & Webbink, 2007). Accordingly, it is of great importance to ensure that children are receiving equal educational opportunities, irrespective of circumstances out of their control such as their socioeconomic status, ethnicity, geographical location, the school they attend, or the social and economic context of the country (Demeuse, Frandji, Greger & Rochex, 2012). Since Coleman's work on equal educational opportunities (1968), many societies have designed policy programs to tackle educational inequalities, namely "educational priority policies". These aim to compensate for the educational disadvantages of less privileged populations, and mark society's acknowledgement that students should not be impeded by circumstances outside of their control (Franck, Ünver & Nicaise, 2019).

Demeuse et al. (2012) define educational priority policies as follows:

> ... policies designed to have an effect on educationally disadvantaged groups through systems or programs of focused action (whether the focus be determined according to socioeconomic, ethnic, linguistic, geographic or educational criteria) by offering something more (or "better" or "different") to designated populations.

While this definition refers to the more general concept of educational priority policies (including priority rules in enrolment, for example), we will focus exclusively on one type of educational priority policy, namely, the additional funding schemes for schools serving disadvantaged students, equity funding policies (EFPs). In the literature, the latter are also labelled 'compensation funding', 'educational priority funding', or 'needs-based school funding'.

There is some skepticism about the effectiveness of EFPs (Ooghe, 2011): their impact on the learning progress of disadvantaged students and educational equity is not always positive, which here and there leads to discouragement and calls for budget cutbacks. This

is paradoxical in a time of increasing inequalities, and it could have serious consequences for disadvantaged and minority groups, social cohesion, and international economic competitiveness (Demeuse et al., 2012). For that reason, an international review of studies about the effectiveness of equity funding is urgently needed. Such a review is an opportunity to examine the evidence base, and may help to improve the overall effectiveness of educational priority policies by identifying the determinants of their success and failure.

At least two research questions must be addressed when evaluating the effectiveness of equity funding policies (EFPs):

RQ1: What have been the effects on educational outcomes?
RQ2: Which determinants could explain the observed effectiveness?

A systematic literature review was conducted to respond to RQ1. This method was not used for RQ2 as the scope of our search would be too broad. However, we started to search for determinants in the list of references we obtained for RQ1.

Method for this review

Effectiveness of EFPs

A comprehensive search strategy was developed to review the literature on the effectiveness of EFPs (January-March 2021; reviewed April 2022). We conducted an electronic search based on two databases: *Scopus* and *Web of Science* (further details on the search functions may be requested from the authors). A combination of the search terms "impact", "equity funding policies", and "cognitive" or "non-cognitive outcomes" was used in the fields of educational sciences and humanities. Since these search terms can be defined by various labels, all synonyms for these terms were included as well. *Google Scholar* was also used to search for references, but we only reviewed the titles of the first 200 references. We searched on articles, book(s) chapters and reports, initially between 2006 and 2021, then whilst reviewing the article in 2022, updating the search to include 2022 to date. After collecting all references (N=2722, 35 in Dutch or French), duplicates and references related to subjects that do not fall within the scope of our interest were removed (e.g. medical education journals). This brought us to 1258 references. An initial screening of the titles resulted in a selection of 293 references. Next, the references were screened based on abstract, which lead to 37 references on which we conducted a full-text screening. Eventually, we found 13 articles that are included in the systematic literature review on EFPs. In a next phase, the backward and forward snowballing method was used to include references that are of interest to our paper, but were not found in the databases (N=14). Finally, the authors added known papers to the list of references (N=4).

To limit the scope of our search, studies that met the following selection criteria were included:

- Published in English, Dutch or French;
- Focused on school funding schemes – not student financing schemes;
- Focused on Western countries (Europe and North-America);
- Research on mainstream preschool, primary and secondary education.

Schemes for students with disabilities or special educational needs are not included in the study, as its focus is on social inequity, and to limit the study to a reasonably achievable scope.

Policy cycle framework

The second aim of this study is to investigate which determinants could explain the observed effectiveness of EFPs. In doing so, we used the policy cycle framework of Verelst, Bakelants, Vandevoort and Nicaise (2020) (Figure 1). In their model, each stage is hypothesised to influence the (potential) effectiveness of EFPs. The model also takes into account the broader context of an education system in which the policy cycle is embedded.

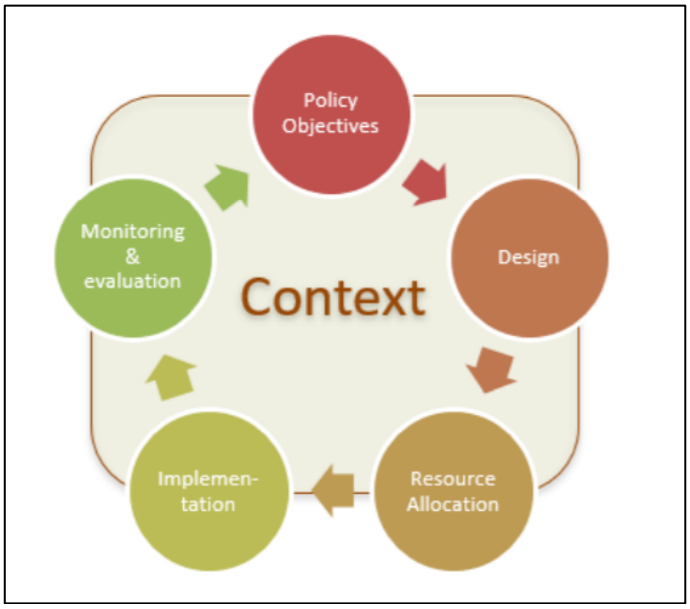

Figure 1: Policy cycle framework of Verelst et al. (2020)

Policy objectives

Due to the variety of EFPs between and within countries, an understanding of the various purposes of EFPs is generally lacking. Therefore, specifying the objectives of EFPs is a fundamental element in evaluating their effectiveness. We will restrict ourselves here to highlighting some general objectives of EFPs.

The diversity and number of objectives of EFPs have increased during the past few decades. They vary considerably as a consequence of, on the one hand, diversification, and on the other hand, the shift from a "compensatory perspective" towards an "inclusive perspective". Whereas the first EFPs were explicitly aimed at reducing educational inequalities through *a posteriori* compensatory measures, nowadays EFPs and their objectives are defined in terms of the *a priori* levelling of unequal opportunities. This broadens their scope, leading to a significant increase in the number of objectives, such as the fight against absenteeism or dropping out, the fight against violence at school, assistance for parents, and so on (Demeuse, 2012). Despite all these differences and varieties, the general objective of EFPs could be seen as supporting students who suffer from learning and development difficulties that are due to exogenous circumstances (Bernardo & Nicaise, 2000). However, considering the observed differences, Bernardo and Nicaise (2000) stated that in broad terms, five general types of specific objectives exist:

1. Promoting the acquisition of basic skills that are traditionally more difficult for target populations to acquire (e.g. acquisition of local language by immigrants);
2. Improving support mechanisms for teachers and schools (e.g. infrastructural matters, staff and teacher training);
3. Enabling the development of educational activities, whether they are integrated into the school curricula or not, to promote school success, especially of targeted populations (e.g. intercultural education);
4. Promoting collaboration between different stakeholders such as the school, families and local authorities to ensure an integrated form of intervention (e.g. literacy courses for parents, health services at school, internships in local enterprises); and
5. Tackling specific and more pressing needs of schools or areas where school exclusion is more problematic due to a high concentration of targeted students (e.g. dropout prevention programs).

Demeuse et al. (2012) compared the EFPs of eight countries and whilst finding similar types of objectives, added one more:

6. Encouraging authorities to target early learners – the best time to compensate for social disadvantage (e.g. early childhood intervention programs).

How effective are EFPs? A brief review of empirical findings

In general, existing evaluations of the effectiveness of EFPs are mixed (Demeuse et al., 2012). Nevertheless, by analysing the allocation of additional resources (the way equity funding is used), the timing of allocation (stage in a child's school career) and the specific outcome measures in detail, it is possible to identify some policies that are more effective than others. Output criteria that are commonly used include student achievement, attendance rates, early school leaving, etc. Non-cognitive outcomes are less commonly used, but equally important (Heckman, 2011). We will not focus exclusively on cognitive outcomes, but also include school career effects and non-cognitive outcomes.

Starting with cognitive outcomes, the results are mixed. Card and Payne (2002) analysed the impact of school finance reforms on the distribution of school spending across richer and poorer districts by using nationwide data from the US. They discovered that the equalisation of school spending led to a decrease in the student achievement gap between pupils from different family backgrounds. Papke (2005, 2008) evaluated the impact of Michigan's "Proposal A reform" on fourth-grade pass rates and seventh grade math tests, and concluded that low-performing schools improved the most. Roy (2011) drew a parallel conclusion: Michigan's "Proposal A reform" increased the student performance of both fourth and seventh graders on state tests in poor school districts, although no improvement in scores on nationwide tests were observed. Similarly, Fan and Liang (2020) examined the effects of California's statewide school finance reform – Local Control Funding Formula (LCFF) – which was implemented in 2013, and found positive effects of the LCFF on student achievement, in particular in high-poverty school districts. In England, declines of 10.9 and 8.9 percent in the achievement gaps between advantaged and disadvantaged primary and secondary schools respectively were observed by Andrews, Robinson & Hutchinson (2017) since the start of the "Pupil Premium" in 2011. Alon and Malamud (2014) also observed a positive impact of interventions funded by the Education Endowment Foundation [EEF], whose goal is – amongst others – to break the link between family income and educational achievement in England. More specifically, the authors discovered that EEF-funded interventions between 2011 and 2019 had positive benefits for the literacy outcomes of "free school meal pupils" who participated in these interventions, equivalent to about 1 month's progress.

In contrast to these findings, Van der Klaauw (2008) and Matsudaira, Hosek and Walsh (2012) both examined the impact of the Title I program, but did not detect any impact of supplementary educational services in mathematics and reading on the achievement of disadvantaged students in primary and secondary education in New York and a large urban school district in the Northeast USA. In Portugal, Ferraz, Neves and Nata (2018, 2019) analysed the Portuguese "Territórios Educativos de Intervenção Prioritária (TEIP)" program, not finding any significant decline in the achievement gap between public TEIP-schools and non-TEIP public schools. In France, the "Zones d'Education Prioritaire (ZEP)", a program that provided additional funding to schools in disadvantaged areas, did not change the achievement gap between disadvantaged and advantaged schools (Cour des Comptes, 2018). At the same time, they observed that the socioeconomic circumstances in many disadvantaged areas had deteriorated, whereas the achievement gaps did not increase. Similarly, the "Réseaux ambition réussite (RAR)" program, a compensatory education policy in which junior highs schools with at least 67% disadvantaged students and 10% pupils having repeated twice or more when entering junior high school, improved the performances of disadvantaged students enrolled into RAR-schools between 2006 and 2011 (Caille, Davezies & Garrouste, 2016).

Looking at the specific ways in which schools use their EF, the results are again mixed. First, several studies researched the impact of class size reduction on student performance scores in both primary and secondary education. The assumption is that smaller classes enhance student outcomes as they allow teachers to devote more attention to individual students. However, existing evaluations of class size reductions are disputed, or showed

rather small improvements in the achievements of disadvantaged pupils (Education Endowment Foundation [EEF], 2018; Gibbons & McNally, 2013; Jackson & Page, 2013; Schanzenbach, 2015). Another strategy to ensure that teachers devote more attention to individual students is the engagement of teacher assistants. Studies investigating this strategy found – again – no evidence that students in classes with teacher assistants performed better (Education Endowment Foundation [EEF], 2018; Webster & Blatchford, 2012). There is evidence that minority and disadvantaged pupils are often faced with novice teachers, who perform less well and possibly negatively affect these pupils' performance. Bénabou, Kramarz & Prost (2009) investigated this issue by studying the ZEP in France. The additional subsidies that ZEP-schools receive, are used partly for teacher bonuses and partly for additional teachers. However, they did not detect any effect of the extra resources on the test scores of disadvantaged students in middle schools (sixth-grade through ninth-grade). Leuven et al. (2007) evaluated the impact of two measures (extra funding for personnel and extra funding for ICT) in the Netherlands on language and arithmetic achievement in primary schools with disadvantaged (minority) pupils numbering over 70%. The effect of the personnel subsidy was not significantly different from zero, presumably because the targeted schools already had sufficient personnel resources. Contrary to these findings, Machin, McNally and Meghir (2010) found that allocating EF for personnel had positive effects; they examined the impact of the UK's "Excellence in Cities (EiC)" program in secondary schools, and observed positive impacts on students' attainment in mathematics and on school attendance. Finally, regarding the impact of ICT subsidies on pupils' achievement, several studies have shown negative effects, meaning that they are associated with a decrease in pupils' test scores. Studies confirming this finding include Goolsbee and Guryan (2006), who found no impact of the availability of the internet on pupil achievement in primary and secondary schools; and Malamud and Pop-Eleches (2011) who examined the effect of home computers on child and adolescent outcomes through a voucher program in Romania.

Whereas the impact of alternative uses of equity funding in schools is mixed, evidence about the timing of allocation is more clear-cut. Studies on early learners showed a positive impact of pre-school interventions on educational outcomes, particularly for disadvantaged children. Cascio and Schanzenbach (2013), for example, examined the impact of President Obama's "Preschool for All" initiative on a variety of child and family outcomes, and observed increased enrolment rates for all children. However, regarding the impact on test scores in eighth grade, they found that children with a lower socioeconomic background clearly benefitted from the program, whereas no positive impact was found on the math scores of children from higher-income families. Leseman et al. (2017) observed similar results in the Netherlands: the educational disadvantage of children targeted by the "Onderwijsachterstandsbeleid" (OAB) diminished through preschool education. Similarly, Felfe, Nollenberger and Rodriguez-Planas (2012) found sizable improvements in children's reading and math skills at the age of fifteen due to a shift from maternal care towards universal high-quality childcare for 3-year olds in Spain. Again, these effects were greater for disadvantaged children.

EFPs may also affect pupils' school career and labour market transitions. Chung (2015) investigated the impact of Maryland's education finance reform on dropout rates, and found no decrease. Comparable results were found by Neymotin (2010), where the Kansas School finance reform did not affect the dropout rates in elementary and secondary education, although the study lacked precision due to possible selection bias. Similarly, Leuven et al. (2007) found no significant effects of extended schooling in primary education, that is, extra education (combined with equity funding) had little impact on the wages of graduates. De Witte, Smet and Van Assche (2020) drew a similar conclusion regarding the equal educational opportunities program of the Flemish Community of Belgium. They did not find a consistent significant effect of the additional funding on grade retention or problematic absenteeism.

The number of studies on the effects of EFPs on non-cognitive outcomes is limited, despite general agreement on the importance of these outcomes. Non-cognitive outcomes, such as perseverance, motivation, self-esteem, self-control, conscientiousness, forward-thinking behaviour, and well-being, all proved to be powerful predictors of students' achievement and success (Almlund, Duckworth, Heckman & Kautz, 2011). This was clearly demonstrated in the "Perry Preschool Program" (Heckman, Moon, Pinto, Savelyev & Yavitz, 2010). The target group consisted of disadvantaged 3-years-old African-American children with an IQ of 85 or below. Following an intervention of two years, while they did not have a higher IQ at the age of 10, they did score higher on achievement tests. This indicated that achievement test scores were influenced by both cognitive and non-cognitive factors, and therefore improvements in non-cognitive outcomes may positively affect the long-term performance of disadvantaged students.

In summary, studies on the effectiveness of EFPs shows very mixed results. The question of whether the investment yields value for money (efficiency) has no clear answer yet. The ambiguity in research findings can be explained partly by the variety of national and historical contexts, and partly due to diverse legal and implementation frameworks.

Determinants of effectiveness

As the measured effects of EFPs did not always meet the expectations of policymakers and educational agents, questions arose in the literature over how this could be explained and what could be done to improve their effectiveness. Based on the policy cycle framework of Verelst et al. (2020), five potential explanations will be discussed. Each determinant reflects one stage of the policy cycle framework. The context in which the policy cycle is embedded also acts as a determinant. The stage "policy objectives" is not discussed as determinant as it falls beyond the scope of this article.

Design: Targeting

Target groups are less privileged population groups who are likely to achieve lower educational outcomes, due to external circumstances (Ross, 2009). The definitions of target groups and their needs vary widely between, and sometimes within, countries. The way in which target groups and their needs are specified may be insufficient and thereby

cause the apparent under-performance of EFPs (Bernardo & Nicaise, 2000; Demeuse et al., 2012).

In general, there are three "levels" of targeting criteria: (1) individual student characteristics; (2) school characteristics; and (3) geographical areas (Bernardo & Nicaise, 2000; Demeuse et al., 2012; Ross, 2009). In the case of individual student targeting, every student with a disadvantaged background is assigned a weight that depends on his/her characteristics. The second level of targeting is based on school characteristics, such as the proportion of disadvantaged students: it is assumed that the burden of social disadvantage increases more than proportionally with the number of disadvantaged students. The third set of criteria relates to geographical areas (educational priority areas) that are disadvantaged regions or neighbourhoods. Here, a majority of the population is affected by poverty, unemployment, dependency on social benefits, educational difficulties, etc.

There is an ongoing debate within the literature about which way of targeting is more effective. This debate has revealed some examples of inefficient territorial targeting. In the US, for instance, several studies evaluating "Title I" concluded that by the end of the 1970s, 68% of all schools in the US received some equity funding, but about 40% of disadvantaged students were overlooked, while 58% of the children who did receive support were not deprived. Similar results were observed in the UK (e.g. Education Action Zones, Sure Start, Excellence in Cities, etc.), Ireland (Breaking the Cycle Scheme, Schemes of Assistance to Schools in Designated Areas), and France (Zones d'Education Prioritaire) (Tunstall & Lupton, 2003; Vandevoort, Bakelants, & Nicaise, 2019). Moreover, in France, Bénabou et al. (2009) found that the "ZEP-label" stigmatised those areas and caused a flight of middle class families making these areas even more disadvantaged.

Due to these criticisms, a shift towards student-based targeting was observed in EFPs, although again some challenges need to be overcome (Bernardo & Nicaise, 2000; Demeuse et al., 2012; Vandevoort et al., 2019). First, in implementing a more refined set of indicators, very detailed data on individual student characteristics are required, which could lead to privacy issues and significantly more paperwork (OECD, 2017b). Second, concerns have been raised about the reliability of the statistics submitted by schools in applying for additional resources. Last but not least, the indicators used need to be good predictors of educational disadvantage.

To further consider the three "levels" of targeting, EFPs are often restricted to pupils within a certain age range (e.g. pre-primary or primary education). These restrictions are informed by a "preventive" approach to defining at-risk groups. Heckman (2011) argued that remedying problems is less cost effective than prevention at the early childhood education age. Machin (2006) reviewed a substantial body of evidence and confirmed this, while there is less agreement on the effectiveness of EFPs that target disadvantaged pupils at later ages.

Resource allocation and implementation

Stages three and four (Verelst et al., 2020) are closely intertwined. Consequently, the following two determinants are related to both stages.

The (inequitable) baseline resourcing of schools

School funding mechanisms are extremely complex due to the involvement of several levels of administration, the increasing number of (private) actors contributing to educational provision, and their growing influence on spending decisions (European Commission/EACEA/Eurydice, 2016; OECD, 2017b). Whereas the provision of a sufficient level of investment in education is important to ensure educational quality, the equitable allocation of resources between schools determines whether all students are given equal opportunities to learn (OECD, 2016a, 2017b). Many education systems have not adequately neutralised pre-existing "Matthew effects" in educational funding, meaning that schools attended by disadvantaged students are themselves often disadvantaged in terms of economic, cultural, social and human resources (Poesen-Vandeputte & Nicaise, 2015). These inequalities in the baseline resourcing may reduce the effectiveness of EFPs.

First, schools may be inequitably funded due to decentralisation and/or school autonomy over budgetary matters. The OECD (2017b) has argued that the more decentralised a system is, the better it can allocate resources in line with schools' specific needs, but the higher the risk of inequitable funding. The funding system in the US, where nearly half of the funding for public schools is provided through local taxes and states play only a limited role, illustrates this well. For example, in Connecticut, one of the richest school districts (Greenwich) spends about $6000 more per pupil per year than does one of the poorest school districts (Bridgeport). Such disparities in spending capacities seem to be a persistent problem in 23 states (Biddle & Berliner, 2002; Klein, 2015; Semuels, 2016). Consequently, unless they are counteracted by educational policies, spending capacities may vary geographically in favour of richer areas, enlarging disparities in the quality of school buildings, facilities, equipment and teaching materials, teachers' experience and qualification, class size, and other resources (Biddle & Berliner, 2002; OECD, 2017a, 2017b). In Europe, Denmark, Sweden and Lithuania are decentralised education systems where local authorities allocate the major proportion of funding to schools (OECD, 2017b).

Besides lower financial resources, disadvantaged schools also tend to have more difficulty in attracting and retaining qualified (in terms of educational certificates) and experienced teachers than do schools with more advantaged student populations. For instance, in the Netherlands, the proportion of high-qualified teachers in secondary education is three times higher in advantaged schools than disadvantaged schools (OECD, 2013). In the Flemish community of Belgium, in Sweden and Alberta, experienced teachers usually work in advantaged schools whereas teachers with less experience mostly work in disadvantaged schools. This obviously reduces the effectiveness of EFPs as less competent teachers not only directly affect students' educational outcomes but are also less able to use additional resources in the most effective way (OECD, 2013, 2017a; Poesen-Vandeputten & Nicaise, 2015).

Disadvantaged schools can also suffer from poor quality of infrastructure, furniture, IT equipment, etc. (OECD, 2017a). Although the evidence on the effect of such resources on students' performance is mixed, the OECD (2016b) concludes that in most education systems poor infrastructure and equipment hinder schools' capacity to provide decent instruction. This is negatively associated with students' scores in thirteen educational

systems. Moreover, disadvantaged schools may choose to invest their additional funding in infrastructure instead of spending it on pedagogical measures such as after-school classes, tutoring, extra personnel, class-size reduction, etc. (OECD, 2017b).

The (inefficient) use of additional resources: school autonomy and school leadership

Another possible contributor to the weak effectiveness of EFPs is the inefficient use of equity funding. Many countries are characterised by multi-level and multi-actor education systems, possibly occasioning ambiguity about the purposes and regulatory frameworks of EFPs. In this context, questions have arisen about the degree of discretion that schools should be granted in managing equity funding (cf. school autonomy), and the ability of school leadership and management teams to deal with budget management (Burns & Köster, 2016; Demeuse et al., 2012; OECD, 2017b).

While greater discretion gives schools the opportunity to use equity funding to fit their specific needs and address local challenges, it also increases the risk of inefficient use due to a lack of top-down guidance and support for teachers, principals and school management teams (OECD, 2017b). An overview of how additional resources are allocated to schools in Europe (European Commission/EACEA/Eurydice, 2016) concluded that in two-thirds of the European education systems, schools receive equity funding from central administrations. In the remaining third, other levels of government are responsible (such as municipalities in Denmark, Sweden and Norway, or autonomous communities in Spain). The OECD (2017b) stated that the more discretion local authorities have, the greater the discretion a school will receive. However, in most education systems, schools or local authorities are bound to several conditions (e.g. criteria, national or local rules, or for specific types of activities) when using equity funding. Yet, in the Flemish community of Belgium, the Netherlands, Finland, the UK (England, Wales, and Northern Ireland) and Bosnia Herzegovina, schools have full discretion in spending the additional funds in the way they deem most appropriate. With such a high degree of discretion, equity funding is not always spent in line with the objectives of the EFP. The Flemish Community of Belgium and England illustrate this problem well. Vandevoort et al. (2015) observed that the additional operational subsidies were largely used by schools to cover fixed costs and basic necessities rather than pedagogical support for disadvantaged students. If such a high degree of discretion goes hand in hand with little or no transparency and accountability at school level, which is the case in the Flemish Community, questions arise whether it would be more efficient to earmark the subsidies. The combination of non-earmarked subsidies with poor accountability at school level often increases the likelihood of inefficient use of equity funding (European Commission/EACEA/Eurydice, 2014; OECD, 2017b).

A related determinant – especially when schools have a high degree of discretion over the allocation of their resources – is the ability of school leadership and management teams to handle budgetary matters (Bloom, Lemos, Sadun & Van Reenen, 2015). Evidence from PISA (OECD, 2016b) has indicated that students' scores are positively associated with a high degree of discretion for school leaders. Nevertheless, this applies only in countries where the level of competence of the management is above the OECD average. Often,

disadvantaged schools have difficulties recruiting better qualified principals and management teams (OECD, 2012, 2017b).

Monitoring and evaluation

Governments sometimes invest a substantial amount of resources to improve educational equity. To ensure that resources are effectively and efficiently spent in line with the specific needs of the targeted students, it is crucial to monitor and evaluate the use of equity funding. This helps to avoid both overspending and underspending, to increase transparency, to lower the risk of mismanagement or fraud, and to increase the accountability of administrators and decision makers (OECD, 2017b). The OECD (2017b) concluded that monitoring and evaluation practices could be improved in many education systems. More specifically, out of the 17 countries participating in the OECD Review of School Resources, only five required their schools to report on a regular basis to central or local administrations about their finances (Chile, Slovenia, Slovak Republic, Iceland and Israel). According to a recent study by Vandevoort et al. (2019), England and France also have strict monitoring and evaluation practices. In England, for instance, each school needs to publish: (1) the way it spends the additional funds; (2) the evolution of disadvantaged students' mathematics and English performance; and (3) its strategy to improve the performance of disadvantaged students (Vandevoort et al., 2019). In other education systems, public authorities depend on the discretion of schools to provide information in order to evaluate or monitor EFPs, but this is often not even a primary concern to administrations (e.g. Lithuania, Portugal, Czech Republic, Sweden and Denmark). For example, in Lithuania, schools with students from poor families are provided with additional support, but no one quite knows to what extent these additional resources serve the needs of these disadvantaged students, as the government prefers to focus on providing inputs rather than monitoring the outcomes (Shewbridge, 2016). In some education systems, no information is available (Austria, the Flemish and French Communities of Belgium, Spain, and the Netherlands). The absence of such information further reduces the effectiveness of EFPs, as it limits the possibility to adjust EFPs to emerging local challenges and to make well-informed spending decisions.

Context of the policy cycle framework

Some general trends in the wider social and/or educational context might adversely affect the degree of educational equity and undermine the effectiveness of EFPs. We will discuss four current contextual trends.

One well-known contextual factor is rising socioeconomic inequality in Europe and other industrialised economies since the 1980s. In recent years, the OECD has repeatedly expressed concern about the fact that widening disparities have already led to under-investment of low-income groups in education (Keeley, 2015). Countries with the widest socioeconomic inequalities face more social problems such as poverty and decreasing literacy and numeracy among the youngest generation (OECD, 2011a; Perrons & Plomien, 2010).

Strongly associated with these socioeconomic inequalities is increasing school segregation, the separation of pupils into parallel school systems based on socioeconomic status or ethnicity. Many studies have focused on this topic and all unanimously conclude that the composition of school and classroom impacts student and school achievement through unequal learning opportunities and peer influences (Karsten, 2010). Students from disadvantaged backgrounds in particular suffer from segregated education in ghetto schools. In a period of increasing racial and/or ethnic diversity and increasing "school choice programs", school segregation is on the rise in many countries (Östh, Andersson & Malmberg, 2013). This tends to offset the impact of EFPs.

Thirdly, an increasing amount of research has emphasised the importance of changing family dynamics for the degree of educational equity. During the past thirty years, many changes have occurred in family formation and household structure, primarily an increase in separation and divorce rates, resulting in more difficult family environments for children to grow up in. Studies have shown a significant impact of a child's family composition on their educational outcomes (Havermans, Swicegood, & Matthijs, 2020; OECD, 2011b). For example, the OECD (2016a) concluded that students who live in single-parent families perform worse than those living in two-parent families. They observed that parental breakup is associated with negative long-term consequences for children's educational attainment. Taking into account the educational level of parents as a reflection of their socioeconomic status, Bernardi and Radl (2014) suggested that parental divorce tends to be more detrimental for children of highly educated parents.

Finally, if educational structures are inherently inequitable, the impact of EFPs could be largely offset. For example, studies examining the impact of tracking age on student performance found that the earlier students are tracked, the larger the achievement gap between weak and strong students. This is strongly related with socioeconomic background, as talented students with a low socioeconomic background will be 'misallocated' more frequently in systems with early tracking (Franck et al., 2019; Lavrijsen, 2013; OECD, 2019). Hence, the impact of the tracking regime may well completely outweigh the effect of equity funding. While many other educational structures may be partly responsible for the poor impact of EFPs (such as free school choice, segregation, grade repetition, ability grouping etc.), discussing all of these structures goes beyond the scope of this article.

Conclusion and implications for policy and practice

Education is a key instrument to strengthen social cohesion, overcome social disadvantage, and facilitate upward social mobility. Nevertheless, millions of children are not given full opportunities to develop their abilities and to maximise their educational success. As it is generally acknowledged that children should not be impeded by unequal opportunities that are due to exogenous circumstances, EFPs have been implemented in many countries to tackle educational inequalities.

This article provided an international review of effectiveness studies concerning equity funding in Western countries. The literature on the effectiveness of EFPs shows mixed results, with the notable exception of schemes that target early learners. The latter have been proven to be highly cost-effective. Otherwise, evaluation studies have found moderately positive effects. However, the results often did not meet the expectations of policy makers and educational providers, causing some scepticism about the effectiveness of EFPs. Five key determinants of success were examined in this paper that can help to explain both the weaknesses and strengths of national EFPs: (1) (in)adequate targeting; (2) the pre-existing 'Matthew effects' in the baseline resourcing of schools; (3) the (in)effective use of additional resources; (4) the monitoring and evaluation; and (5) the general context in which EFPs are implemented. These determinants should be kept in mind when designing and evaluating EFPs.

While this study does not offer a conclusive answer to the question of whether the present EFPs yield value for money, it does not question the relevance of EFPs. However, one must recognise the various factors that are linked to equity funding and that affect its effectiveness. Due to the complexity of determinants, it is very difficult to disentangle the pure effectiveness of EFPs, or to predict what would have happened if equity funding did not exist. To date, no researcher has successfully resolved the previously mentioned issues. However, as a few countries appear to have implemented effective equity funding, we conclude that EFPs do have the potential to reduce educational inequalities.

In order to establish opportunities for improvement, this review provides seven guidelines for policy and education providers:

1. Acknowledge and minimise the adverse impact of the broader social and educational context.
   First, school segregation is at least partly an exogenous trend, because it mirrors residential and labour market segregation. Hence, public housing and anti-discrimination measures in other policy areas need to be coordinated with school desegregation measures. Second, governments should invest more in family-friendly policies to support single parents and prevent the further fragmentation of families (OECD, 2011). Apart from these social trends, some educational structures could also counteract the effectiveness of EFPs. Structural reforms in education are long-term processes, however, in the short run, governments could opt to implement experiments on a smaller scale and carefully monitor their impact on equity (OECD, 2017b).

2. Level the playing field in the mainstream resourcing mechanisms of schools.
   The share of equity funding in overall national education budgets is often relatively small. It should not come as a surprise, then, if its redistributive impact remains limited or insignificant. This is particularly true when the provision or funding of education is decentralised to the local level. Educational authorities should therefore evaluate the actual distribution of school resources, taking into account the legal framework but also (if possible) hidden contributions, and quasi-market mechanisms in the allocation and mobility of personnel.

3. Clarify the objectives, target groups and regulatory framework of EFPs.
   The objectives, target groups, instruments and regulatory framework of EFPs all need to be formulated in a SMART (specific, measurable, assignable, realistic and time-bound) way, and made clear to all stakeholders. Ambiguities lead to inefficient or conflicting usage of funds, particularly in disadvantaged areas or schools, due to a lack of qualified management teams.

4. Early childhood intervention.
   The rate of return on investment in human capital is highest in children's early years. It is therefore preferable to concentrate EFPs at the earliest possible ages (including the "childcare" period) and to gradually temper the additional funding across the primary and secondary education career.

5. Strengthen monitoring and evaluation practices to ensure that equity goals are met.
   When monitoring and evaluation instruments are lacking, reassessing the effectiveness of programs is hard – if not impossible – thereby making policy and educational providers grope in the dark. As a consequence, transparency is missing and accountability mechanisms will be insufficient; local administrations and/or schools will have too much flexibility to spend the extra funding for other purposes. Therefore, the OECD recommends finding the right balance between flexibility on the one hand, and accountability and transparency mechanisms on the other.

6. Develop and promote professional development programs for teachers and school leadership
   Teachers and school leaders are important actors in any education system as they are – at least in principle – best positioned to identify the specific needs of their school and to allocate resources accordingly. Yet, disadvantaged schools usually experience problems in recruiting qualified teachers and school leaders. Therefore, continuous professional development of teachers and school leaders is necessary to improve equity in education (for instance through in-service training or earmarked funds for professional development). In particular, educational administrations need to pay sufficient attention to the development of the pedagogical and managerial capacity of principals (OECD, 2017b).

Limitations and recommendations for further research

Our review does face, however, some difficulties. First, the focus, nature, and scope of EFPs differ widely across education systems, which hinders the making of comparisons. So far, no dataset exists which 'measures' EFPs in several countries. It would be highly beneficial if such a 'measurement' would exist to make comparisons possible. Further research could explore if the development of such a measurement is feasible and how to operationalise it. Second, to limit the scope of our article, we focused only on European and North-American countries. These are 'developed countries'. Educational inequality is, however, also an issue in many other countries (such as the global south). Further research could focus on how these countries could effectively implement EFPs.

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