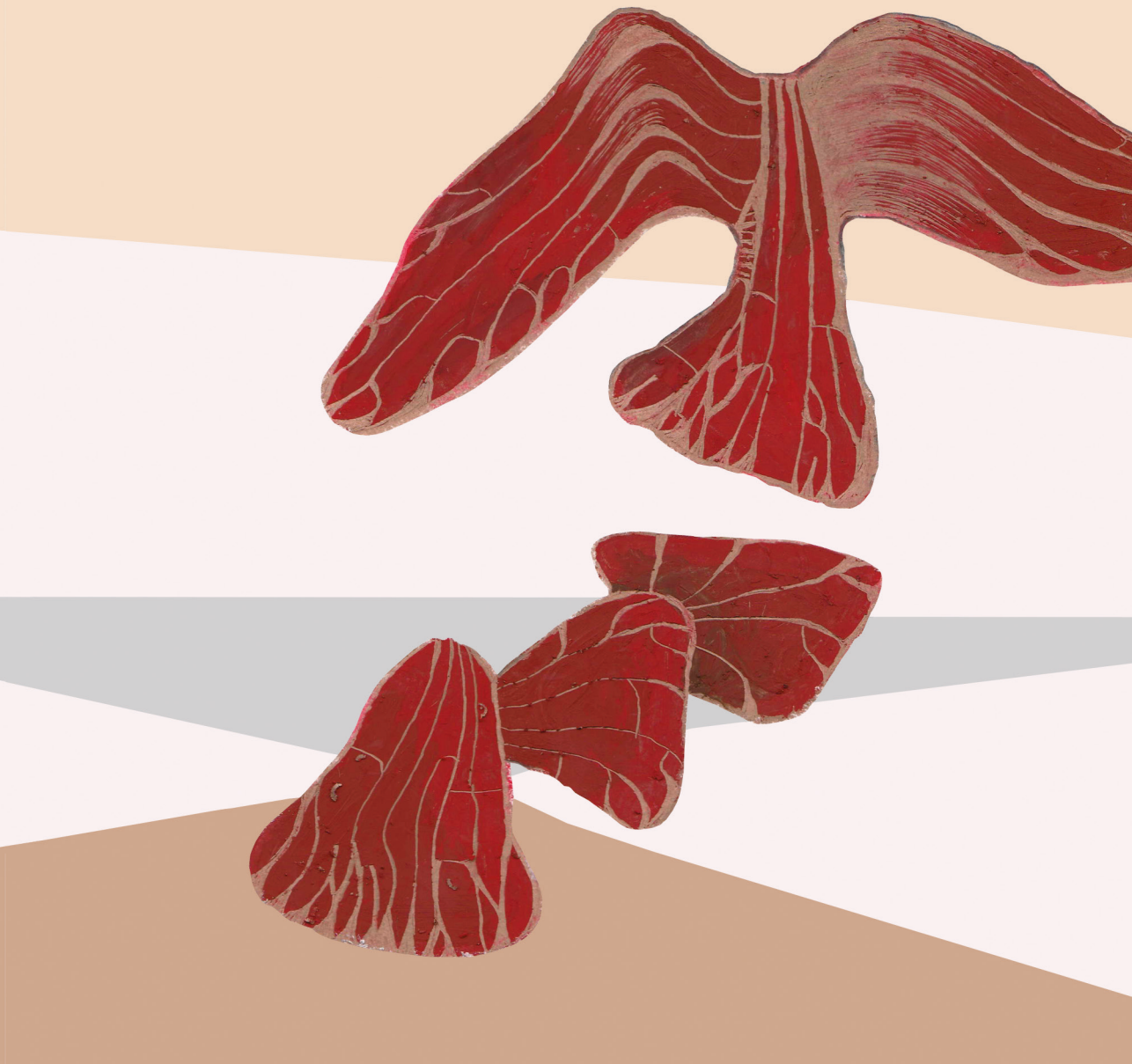
School Autonomy in Practice

School Intervention Decision-Making by Dutch Secondary School Leaders

Annemarie Neeleman



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Published by Universitaire Pers Maastricht.
Printed by ProefschriftMaken, Maastricht.
Cover design by Samir ter Lüün.

ISBN 978 94 6380 371 7

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DISSERTATION

to obtain the degree of Doctor at Maastricht University,
on the authority of the Rector Magnificus,
Prof.dr. Rianne M. Letschert
in accordance with the decision of the Board of Deans,
to be defended in public
on Friday 28 June 2019, at 14:00 hours

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For Julie Neeleman

2014-2018

Light of my life

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1

Chapter 1

Introduction

1.1 Research aim and questions

During recent decades, countries all over the world have aligned their education systems in accordance with the path of increasing school autonomy (OECD, 2012). School autonomy is regarded as an important condition to improve school practices so that they are more closely in line with stakeholders' changing expectations and the increasing demand for high-quality education (Cheng, Ko, & Lee, 2016). Local expertise is expected to lead to better decisions regarding resource allocation, school improvement, and alignment with local demands (Hanushek, Link, & Woessmann, 2013). To counterbalance school autonomy, more rigorous accountability is often introduced (OECD, 2013). Both trends have led to an increase in school leaders' decision-making responsibilities, as the school leader is the actor who bears the ultimate process responsibility for the institution's operation (Spillane & Lee, 2014). In addition to being granted more decision-making responsibilities, school leaders are increasingly urged to use evidence in their decision-making (Collins & Coleman, 2017; Wiseman, 2010). Evidence use is progressively being positioned as vital to ensuring the validity of educational practices (Brown, 2015). To this end, school leaders have a wide range of school data at their disposal to inform their decision-making (Schildkamp, Karbautzki, & Vanhoof, 2014). Along with school internal data, educational effectiveness research (EER) provides school leaders with a growing external knowledge base regarding effectual interventions (Reynolds et al., 2014). Decades of effectiveness research have illustrated that while schools and school leaders can make a difference in terms of enhancing student achievement, not all interventions are equally effective in that respect (Robinson, Hohepa, & Lloyd, 2009; Scheerens, 2016).

Despite knowledge of the de jure distribution of decision-making responsibilities in education systems (OECD, 2012), the acknowledged impact of schools and school leaders on student learning, and the wide availability of research evidence and school data to inform decision-making, current discussions about school autonomy are largely uninformed by analyses of how school leaders use their decision-making responsibilities in school practice. The question remains, however, of how school leaders actually use the growing level of school autonomy. Which school interventions do school leaders actually pursue in their expanded decision-making territory and with growing knowledge and data bases at their disposal? What motivates their intervention decisions? And, to what extent do school leaders actually use research evidence and school data to inform their school intervention decisions? The answers to these questions currently hide in the black box of the operationalization—or the de facto use—of school autonomy. The aim of this dissertation is to generate further insight into how school leaders exercise school autonomy in practice. Dutch secondary education serves as the research context. The aim is explored by means of the following three research questions:

1. Which school interventions do Dutch secondary school leaders pursue?
2. What motives underlie school leaders' school intervention decisions?
3. What role does evidence play in school leaders' school intervention decisions?

The context informing the research questions is outlined in the next sections.

The following section (1.2) defines the key concepts that underlie the dissertation. Section 1.3 presents the contextual aspects of Dutch secondary education that are relevant to this study. Section 1.4 introduces the overall methodological approach, as well as the specific aims, methods, and data for the individual studies, while Section 1.5 sketches the structure of the dissertation.

1.2 Key concepts

The key concepts that form the basis of the dissertation's aim and research questions are *school autonomy, school intervention, school leader,* and *evidence.* The applied definitions of these four key concepts are presented in this section.[1]

1.2.1 School autonomy

The dictionary defines *autonomy* as "self-governing," which, in turn, means "functioning without the control of others" (Levacic, 2002, p. 187)2002, p. 187. Whereas some studies have interpreted autonomy in a twofold manner as both the freedom and capacity to act (e.g., Gawlik, 2008; Helgøy, Homme, & Gewirtz, 2007; Lidström, 1991) or have focused on capacity alone (e.g., Agasisti, Catalano, & Sibiano, 2013), most analyses have used a definition that derives from the freedom to act. Anderson (2005, p. 73), for example, found "an autonomous organisation . . . responsible for making decisions about a pre-determined set of issues relating to its governance and mode of operation." According to Hooge (1995, p. 1), "the autonomy of a school refers to its degree of self-government in relation to the degree of state intervention." Similar interpretations of school autonomy were employed by Whitty (1997, p. 3), who defined *school autonomy* as "moves to devolve various aspects of decision making . . . to individual public schools." Honig and Rainey (2012, p. 467) described it as "increased discretion over particular decisions." Woessmann et al. (2009) emphasized the delegation of a task to a school by an agency with authority over that institution. In this dissertation, *school autonomy* is defined as a school's right of self-government—encompassing the freedom to make independent decisions—regarding the responsibilities that have been decentralized to schools.

1 Various texts presented in Sections 1.2 and 1.3 are based on Neeleman (2019). "The scope of school autonomy in practice: An empirically based classification of school interventions." *Journal of Educational Change*. doi:10.1007/s10833-018-9332-5

Increasing school autonomy is expected to leverage improvements in student learning through activities that build on the school's strengths and address local needs (Honig & Rainey, 2012). Decentralizing decision-making responsibilities to the level closest to operations is, moreover, believed to enable the more efficient management of public funds (Eurydice, 2007). Opponents of increasing school autonomy, however, warn of potential opportunistic behavior by local decision-makers in cases of diverging interests or information asymmetries between central agencies and local decision-makers (Woessmann et al., 2009). This latter concern is one reason many education systems that increase school autonomy introduce or intensify standardized accountability[2] policies in parallel.

Furthermore, various studies have indicated that school autonomy improves student achievement only in those education systems with accountability measures that hold practitioners responsible for their actions (Hanushek et al., 2013; Woessmann et al., 2009).

1.2.2 School intervention

School autonomy is operationalized via interventions at the school level. In this dissertation, a *school intervention* is broadly defined as a planned action intended to cause a change in a school. This change can be either an adjustment to current school practices or the start of something new. In an attempt to grasp the full potential of school autonomy, this study deliberately employs an expansive definition of the term. First, this broad definition includes all possible areas of school autonomy; it is not limited to specific school decision-making domains, such as educational interventions or resource allocation. Second, the definition is not confined to innovations. Even though the difference between the two notions might seem minor, the term *innovation* connotes something new (Hellström, 2004; Verschuren, 2013) or "significantly improved" (Lubienski, 2009, p. 19), rather than an adaptation of something already existing. An innovation can be carried out by means of one or more interventions, but an intervention is not necessarily executed via one or more innovations. Decision-making responsibilities at the school level clearly entail more than innovations alone. This dissertation rests on the assumption that limiting the definition of a school intervention to innovations would undervalue, or even ignore, large parts of actual decision-making at the school level. Third, school interventions are studied in their initiation phase. This stage is also known as the mobilization or adoption phase. It consists of one or more elements that precede and encompass a decision on whether to adopt or proceed with an intervention (Fullan, 2001). Studying school interventions during the initiation phase means that

2 Following Woessmann et al. (2009, p. 25), in this dissertation *accountability* refers to "all devices that attach consequences to measured educational achievement."

interventions are relevant from the moment they are first considered, regardless of the outcome of that deliberation phase. Thus, this study includes interventions that school leaders had considered but had deliberately not (yet) introduced. Limiting the focus to interventions that proceeded to the implementation phase might have systematically biased the view of the actual range of school autonomy.

1.2.3 School leader

School leaders play a central role in initiating changes in schools (Fullan, 2001; Pont, Nusche, & Moorman, 2008). Together, increasing school autonomy and intensified accountability have led to an increase in school leader decision-making responsibilities over recent decades (Glatter, 2002; OECD, 2016b). Despite the current interest in distributed leadership (Bush & Glover, 2014), each school is ultimately headed by a single individual who bears the decision-making responsibility at the school level and who is accountable for the school's operations (Earley & Bubb, 2013; Spillane & Lee, 2014; Wildy, Forster, Louden, & Wallace, 2004). In this dissertation, this single individual is referred to as the *school leader*.[3] Given that individual's position as the decision-making executive at the school level, this study was carried out among, and with, school leaders with the ultimate decision-making responsibility for their school location(s).

1.2.4 Evidence

In this dissertation, *evidence* is broadly defined as all information sources that potentially inform school leaders' decision-making. This definition hence includes school data, school action research, and research evidence alike. Research evidence, moreover, is not confined to academic research, but can also derive from policy sources or knowledge brokers. In current discussions about evidence-informed practice, evidence is frequently restricted to research evidence, or knowledge generated through scientific research (Biesta, 2010). Some have even further limited research evidence to that generated through the "gold standard" of randomized control trials (Sullivan, 2011, p. 285). Advocates of the use of research evidence in education believe that it can have a positive effect on school improvement (Greany, 2015). Internationally, many efforts have been made to study the use of research evidence in educational practice (e.g., Godfrey, 2017; Harris et al., 2013). Other studies have focused on the use of (school) data in educational practice (e.g., Prøitz, Mausethagen, & Skedsmo, 2017a; Schildkamp et al., 2014). To this day, however, research evidence and school data often represent two separate fields of activity and study (Brown, Schildkamp, & Hubers, 2017). That said, studies have approached evidence use more comprehensively by asking practitioners what kind of evidence they

3 Whenever the term *school leader* is used in this dissertation, it encompasses equivalent terms such as *principal, head teacher, director, rector,* or *location/sector/departmental/general manager.*

find useful (e.g., Farley-Ripple, 2012; Penuel, Farrell, Allen, Toyama, & Coburn, 2016). These studies suggested that practitioners use a wider array of sources than either research evidence or school data alone. Based on these findings, this dissertation assumes that limiting the notion of evidence to research evidence and/or school data would overlook considerable sources of actual evidence used by school leaders.

1.3 Research context

Dutch secondary education serves as the research context of this dissertation. This section presents those aspects of Dutch secondary education that are of relevance to the dissertation and that make it an exemplary setting to study the exercise of school autonomy by school leaders.

1.3.1 School autonomy in the Dutch education system

The Dutch Constitution guarantees school autonomy in accordance with the principle of "freedom of education." Since 1917, schools have been free to choose and follow their own pedagogical visions (Waslander, 2010). Freedom of education originates from the intention to give parents and diverse associations in society the right to establish and operate their own schools based on religious, ideological, or educational convictions (Hooge, 2017). The Dutch government provides funding for both privately and publicly run schools, provided that they meet certain quality and financial requirements. Currently, 26% of all schools are publicly run, while 74% are run privately (Schools on the Map, 2018). The vast majority of privately run schools (69%) are associated with a particular religious denomination (Schools on the Map, 2018).

Compared to education systems in other Organisation for Economic Co-operation and Development (OECD) member countries, schools in the Netherlands operate in a highly autonomous policy context (OECD, 2012).[4] Within a framework of learning objectives, standardized examinations, and block grants established by the national government, the governance of Dutch schools is highly decentralized. In lower secondary schools, 86% of "key decisions" on matters regarding the organization of instruction, personnel management, and resource management are made at the school level, as compared to the OECD average of 41% (OECD, 2012). Since there is no national curriculum, schools are largely free to decide what to teach and how to teach it, as long as they meet centralized quality standards and fulfil national learning objectives.

4 According to the OECD definition, the *school level* refers to "the individual school level only and includes school administrators and teachers or a school board or committee established exclusively for that individual school. The decision-making body—or bodies—for this school may be: an external school board, which includes residents of the larger community; an internal school board, which could include headmasters, teachers, other school staff, parents, and students; and both an external and an internal school board" (OECD, 2012, p. 509).

School autonomy is balanced by a set of accountability standards, attainment targets, and a national examination system developed by the government. The Inspectorate of Education, under the responsibility of the Minister of Education, monitors both the quality of education and compliance with statutory and financial rules and regulations (Wolf de, Verkroost, & Franssen, 2017). Due to the high level of school autonomy regarding a broad range of decision-making areas, the Dutch education system is an exemplary setting to study school leaders' actual exercise of school autonomy.

1.3.2 Secondary education in the Netherlands

Although this study could have been performed in any sector of the Dutch education system, secondary education was selected for its organizational complexity. Being the transitional link between primary and tertiary education, secondary education is characterized by ever-present multiple interests, concerns, and stakeholders. With seven possible tracks, Dutch secondary education has the most differentiated systemic structure of all OECD country secondary education systems (OECD, 2015). Parents and students can choose any secondary school, as long as it is aligned with the primary school's advice. Most secondary schools offer multiple tracks, and pupils can, to a certain extent, transfer between these tracks within a school. School choice, moreover, enables students to change tracks between schools. Consequently, school choice provokes a considerable amount of competition among individual schools, as losing students means forfeiting school funds (Gaskell, 2002; Hirsch, 1995). Since a growing number of schools are located in areas of population decline (CBS, 2018), school leaders are increasingly concerned about the continuity of their schools. Fluctuations in student numbers have had more direct consequences at the school level since the transition from a reimbursement financing model to lump-sum funding.This latter financing model has resulted in a linear relationship between school finances and the number of students attending a school (Hooge, 2017). School choice hence incentivizes schools to organize their education such that it meets diverse and changing student requirements and interests (OECD, 2013).Consequently, school choice is believed to unleash competitive forces that drive school improvement (Woessmann et al., 2009). In summary, the researcher expected Dutch secondary education's organizational complexity, its highly tracked structure, and the combination of school choice and the (anticipated) decline in student numbers to produce a diverse assemblage of school interventions and hence a suitable setting for studying school leaders' exercise of school autonomy.

1.3.3 School leaders in Dutch secondary education

In the Netherlands, secondary school leaders are appointed by and accountable to school boards (OECD, 2014a). School boards oversee the implementation of legislation and regulations in the school, and they employ teachers and other staff (Nusche, Braun, Halász, & Santiago, 2014). When a school board consists of only one school, the board and the school are part of the same legal entity, and a single person performs the functions of chair of the executive board and school leader. This situation applies to 37.4% of all secondary schools (OECD, 2016a). Today, most school boards are governed by professional board members, rather than by voluntary governors such as parents or laypeople (Hooge, 2017). Despite school boards being formally accountable for the organizational and educational quality of the school, in practice, a vast share of decision-making power is delegated to the school management: "everybody looks to the school leader to guide decision-making in the school" (OECD, 2016a, p. 143). In the Netherlands, most school leaders "are responsible for financial matters and for ensuring that teaching and learning comply with the school's educational goals and standards" (OECD, 2014a, p. 10). Responsibilities range from resource allocation and lesson plans to methods for teaching and learning. Decision-making powers for most matters related to human resources—including hiring, firing, and professional development—are delegated to school leaders as well (Eurydice, 2007). Pont et al. (2008, p. 99) have noted that "boards govern the schools, but they do not always intervene in schools' internal policies." In Dutch secondary education practice, therefore, the autonomy that is officially delegated to school boards is, at the school level, often exercised by school leaders.

In Dutch legislation, there are no regulations about school leaders—their duties, functions, authority, qualifications, quality, and competences are not mentioned (Bal & De Jong, 2007). A professional standard (Dutch Council for Secondary Education, 2014) and a professional register (Dutch Register for Secondary Education School Leaders, 2018) for school leaders have both been recently developed, but disregarding these two instruments has not resulted in any consequences to date. Formal and non-formal[5] training activities of various lengths and on diverse topics are offered by a variety of institutes, such as universities, the Dutch Council for Secondary Education, and third-party organizations.Regarding their own professionalization, Dutch school leaders have lately demonstrated a strong preference for different forms of informal learning[6]—such as reading books and articles, participating in professional networks, and mentoring—over formal learning activities (Krüger & Andersen, 2017).

5 Formal training activities are "typically provided by an education or training institution, structured (in terms of learning objectives, learning time or learning support) and leading to certification. Formal learning is intentional from the learner's perspective." Non-formal training activities take place "outside the formal system either on a regular or intermittent basis" (UNESCO, 2010, p. 6).

6 "Learning resulting from daily life activities related to work, family or leisure. Informal learning is part of non-formal learning. It is often referred to as experience based learning and can to a certain degree be understood as accidental learning" (UNESCO, 2010, p. 6).

1.4 Methodological approach

This section first presents the overall methodological approach on which this dissertation relies (1.4.1). Sections 1.4.2 to 1.4.5 introduce the research aims and methodological approaches of each of the four studies that together comprise this dissertation. The detailed methodological approaches of these studies are elaborated in the corresponding chapters (2–5). This section concludes with a brief description of the studies' data and samples (1.4.6).

1.4.1 Overall methodological approach

The aim of this dissertation is to generate further insight into how school leaders actually exercise school autonomy in practice. A literature review on school autonomy and school (leader) practices and nine open interviews with experts in the fields of academia (5), policy (2), and practice (2) were conducted to demarcate the research aim and develop the three research questions guiding this dissertation (see Section 1.1). In an attempt to achieve both "breadth and depth of understanding and corroboration" (Johnson, Onwuegbuzie, & Turner, 2007, p. 123), the researcher decided to study school leaders' use of school autonomy by means of both quantitative and qualitative research methods: so-called mixed-methods research (Creswell & Plano Clark, 2011). The combination of research approaches was expected to produce more valuable insights into school leaders' exercise of school autonomy than either of the individual approaches on its own. Quantitative methods predominantly facilitate the analysis of phenomena on a large scale. Qualitative methods, on the other hand, "are fundamentally well-suited for locating the *meanings* people place on events, processes, and structures of their lives and for connecting these meanings to the *social world* around them [authors' italics]" (Miles, Huberman, & Saldaña, 2014, p. 11).

This dissertation aims achieve both goals. For the first, a broad overview of Dutch secondary school leaders' school intervention decisions, the underlying motives, and evidence use quantitative methods were used. A digital questionnaire was used to yield observations from a large number and wide variety of Dutch secondary school leaders. In a deliberate attempt to steer the respondents' answers as little as possible and, thereby, enable potential unforeseen contributions, this questionnaire had an open-ended design. However, even with an open-ended character, questionnaire responses are delineated in nature. Therefore, quantitative methods were used to generate additional in-depth insights into school leaders' actual school autonomy practices. Semi-structured interviews served to further explore the motives underlying school leaders' intervention decisions and their use of evidence in the decision-making process. Besides various quantitative and qualitative analyses, the questionnaire findings were used for the selection of the interview sample.

To achieve homogeneity in the analysis of school leaders' motives and evidence use, one particular school intervention that proved very popular from the questionnaire served as the first sampling criterion. Starting from that shared school intervention, the researcher applied the strategy of maximal variation sampling (Creswell & Plano Clark, 2011) to allow for potential different perspectives of school leaders with different professional backgrounds, operating in different school contexts.

The combination of qualitative and quantitative methods is, moreover, regarded as methodological triangulation (Tashakkori & Teddlie, 1998). Methodological triangulation serves to expose both similarities and differences between the different research strands. As with many mixed-methods studies, this study falls between the poles of fixed and emergent mixed-methods designs (Creswell & Plano Clark, 2011). The combination of both quantitative and qualitative research methods was initially selected due to the above-mentioned advantages of this approach; the results of the first study then informed the aim and methodological approach of the following study, and so on. This hybrid design led to four studies with varying methodological approaches, most of which themselves relied on mixed method. The research aims and methodological approaches of each of the four studies are elaborated in the following sections (1.4.2–1.4.5).

1.4.2 Study 1: The construction of an empirically based classification of school interventions and the application of this classification to the distribution of current Dutch secondary school interventions (Chapter 2)

The first study had two aims. To study school leaders' actual school intervention decisions, the researcher first constructed and validated an empirically based classification for analyzing school interventions. Using this classification, the researcher secondly aimed to present the distribution of current Dutch secondary school interventions. These aims were pursued by means of a mixed-methods approach, which consisted of a literature review, a digital questionnaire with open-ended questions, and various semi-structured interviews. This combination of methods was expected to generate both large-scale and in-depth information about current school interventions. The combined methods also enabled data collection, theory generation, and methodological triangulation (Tashakkori & Teddlie, 1998).

To explore existing classifications and inform the questionnaire design, the study started with a focused literature review on school autonomy, school interventions, and school leadership. Subsequently, a digital questionnaire was used for the large-scale collection of data on the school interventions pursued by Dutch secondary school leaders. In an attempt to consider the full scope of potential school interventions in practice, the researcher developed the quantitative instrument (questionnaire) in a qualitative manner

(open-response questions). These features made the questionnaire itself a mixed-methods instrument. Before distributing the questionnaire, the researcher tested various drafts in nine semi-structured interviews (Galetta, 2013) with decision-makers at the school level (i.e., middle managers, school leaders, and chairpersons of school boards in both primary and secondary education). These interviews assessed the comprehensibility of the questionnaire's design and contents by means of member checks (Bartlett & Burton, 2012; Flick, 2009). The questionnaire asked school leaders to list up to three school interventions they had introduced in the past or in the current school year. School leaders were also asked to list up to three school interventions they had considered but not introduced in the past or in the current school year. This latter question was included to maximize the scope of potential school interventions and thereby minimize any systematic biases concerning school leaders' exercise of school autonomy. For similar reasons, the questionnaire was based on open-response questions. Approximately 14% of all Dutch secondary school leaders with ultimate process responsibility completed the questionnaire (N = 196). Even though the population that received an email invitation was, by design, not completely random, the distribution of various Dutch secondary school characteristics across both the response group and school locations (DUO, 2015) did not demonstrate any substantial anomalies. Construction of the classification started from the 735 reported school interventions. The verification and validation of various draft classifications were pursued via six semi-structured interviews with secondary school leaders. The rich school intervention dataset that originated from the questionnaire's open-ended questions was categorized and then analyzed using the developed classification.

1.4.3 Study 2: The relationship between actual school interventions and factors found in educational effectiveness syntheses (Chapter 3)

The second study addressed the extent to which the interventions that take place in Dutch secondary school practice reflect the findings of the EER literature. Educational effectiveness research studies a wide range of factors that are likely to affect student achievement. In the course of recent decades, many such factors have been identified. This study first aimed to identify analogies between school practice and EER findings. Second, for those cases where analogies were present, the study aimed to determine whether the resemblance was particularly close, with a high degree of likeness between practice and theory, or whether the parallel was more general. Third, the study analyzed whether those school interventions that are introduced in practice are those with relatively high effect sizes.

To achieve these aims, the researcher executed a comparative analysis contrasting the 595 school interventions introduced by Dutch secondary school leaders (according

to the digital questionnaire introduced in Section 1.4.2) with all effectiveness factors presented in three effectiveness syntheses: Robinson et al. (2009), Scheerens (2016), and Hattie (2009). Meta-analyses are comprised of multiple individual rigorous studies. As such, they present robust results regarding the effectiveness of the items in question. Since no syntheses have exclusively dealt with Dutch (secondary) education, three internationally authoritative studies were used for the comparative analysis. To analyze the interventions from both a school perspective and a school leadership perspective, the researcher employed syntheses from both effectiveness traditions.

Each school intervention from the questionnaire dataset was systematically compared to each individual factor reported in each synthesis study according to the available definitions or descriptions. Subsequently, each analogy between a school intervention and an effectiveness factor was categorized into one of four analogy types, primarily based on the abstraction level of the effectiveness factor in question. The mean effect sizes and ranks of all school interventions with an analogous effectiveness factor were included in the analysis. Finally, an in-depth analysis of the three school interventions with the highest frequencies was conducted to extend the practical significance of the comparative analysis.

1.4.4 Study 3: School leaders' personal beliefs and the motives behind their school intervention decisions (Chapter 4)

The third study aimed to uncover the motives behind school leaders' school intervention decisions via 10 semi-structured interviews with school leaders. A literature review examining various educational research disciplines related to decision-making demonstrated that school leader behaviors and actions are influenced by many, often interlinked, factors at the personal, organizational, and societal levels. In some studies, personal beliefs are treated as among the many factors that influence school leader's actions and behaviors. In other studies, personal beliefs are deemed to play a much more prominent role. In these latter studies, personal beliefs are conceptualized as shaping or filtering other factors at the personal, organizational, and societal levels. Since the literature review did not suggest that one paradigm should be preferred for exploring Dutch secondary school leaders' intervention motives, characteristics of both were used to compose the three research questions guiding this study:

1. How can school leaders' personal beliefs be characterized?
2. What role do personal, organizational, and societal factors play in the intervention decision regarding differentiation[7]?
3. What role do personal, organizational, and societal factors play in intervention decisions in general?

7 The rationale behind this question into a specific intervention is introduced in the next paragraph.

Each interview followed the same structure, included the same elements and key questions, and was divided into three parts. In the first part, school leaders were asked to orally list a set of personal (school leader), organizational (school), and societal characteristics. In the second part, the three research questions were explored via a semi-structured series of questions. In the third and final part, school leaders were presented with a list of 59 factors at the personal, organizational, and societal levels that potentially affect school intervention decisions. The interview protocol was first tested in a pilot interview. In an attempt to make the topic of school intervention decision-making concrete enough for school leaders to share their practices, the researcher applied the criterion of specificity (Flick, 2009). To connect with school leaders' current intervention preferences and simultaneously enable a potentially large sample, the researcher selected an intervention type that the questionnaire had indicated is highly popular among Dutch secondary school leaders—interventions concerning differentiation.

The 10 school leaders who were invited to participate in the interviews were purposively selected according to the strategy of maximal variation sampling (Creswell & Plano Clark, 2011). From a larger group of school leaders who indicated that they had introduced a differentiation intervention, 10 individuals were selected according to their differences in terms of a variety of school leader characteristics (e.g., sex, years of school leader and teaching experience, educational attainment) and school characteristics (e.g., location, size, school type, demographic trends). The interview transcripts were analyzed via first and second cycle coding (Miles et al., 2014) and searched for missing or disconfirming evidence. For each factor on the list, the mean score and standard deviation were calculated.

1.4.5 Study 4: Evidence use by school leaders in school intervention decision-making (Chapter 5)

The fourth and final study aimed to provide insight into the use of evidence by Dutch secondary school leaders in their school intervention decision-making. The two research questions that guided this study are as follows:

1. Do school leaders use evidence in their school intervention decisions?
2. What kind of evidence do school leaders use in their school intervention decisions?

School leaders' evidence use was explored by means of a mixed-methods approach that combined observations from a large number and wide variety of school leaders with illustrations of school leaders' actual use and interpretation of evidence in their decision-making practice. A mixed-methods instrument (questionnaire with open-response questions) was used to collect large-scale data on school leaders' actual use

and interpretation of evidence. In an additional attempt to study their actual evidence use—rather than their responses to a theoretical or desired interpretation imposed by the researcher—the researcher broadly defined *evidence* as all information sources that potentially inform their decision-making (see Section 1.2.4). The questionnaire asked the school leaders to indicate per reported school intervention if they had used evidence in their considerations. After answering that question, school leaders were asked to list the consulted evidence (sources) for one of their school interventions. This intervention was randomly selected by the questionnaire software. To enable a meaningful analysis of the 371 evidence items that followed from both the comprehensive definition of evidence and the open-ended character of the questionnaire, the researcher inductively derived categories from the dataset. This approach resulted in six empirically derived evidence-source categories with which school leaders' evidence use was analyzed.

The qualitative findings from the 10 semi-structured interviews provided illustrations of school leaders' depiction and use of evidence in their school intervention decision-making. As presented in Section 1.4.4, the semi-structured interviews focused on school leaders' beliefs about their school leadership and the motives behind their school intervention decisions. To avoid a potential social desirability bias, the researcher did not ask any direct questions about the role of evidence in decision-making processes based on the assumption that if evidence indeed influenced the school leaders' intervention decisions, it would manifest itself in their accounts of their considerations. To ensure that the topic was not overlooked by the school leaders, the researcher included various evidence-related factors in the list of factors that potentially affect school intervention decisions. The discussion of these factors would either confirm that evidence had been a minor factor in school intervention decision-making or reveal that it had indeed been an important factor, but one thus far unmentioned in the interview. The latter scenario provided opportunities for follow-up questions probing the kind of evidence used. All interview transcripts were analyzed via first and second cycle coding and searched for missing or disconfirming evidence. The six categories of evidence sources that resulted from the process of inductively categorizing the questionnaire data served as pattern codes during the second cycle coding of the transcripts.

1.4.6 Data and samples

All data presented and used in the four studies of this dissertation is original data obtained via the various data collection approaches. All data collection elements, including the school leader samples from which the data originated, are described in detail in the chapter in which the data in question is first mentioned. For datasets used in more than one study, later chapters contain references to the chapter in which the data and sample were introduced.

1.5 Structure of the dissertation

The next chapter (Chapter 2) elaborates the construction and validation of an empirically based classification of school interventions and the distribution of the school interventions that are currently initiated by Dutch secondary school leaders. Chapter 3 presents the comparative analysis contrasting the school intervention dataset from Chapter 2 with the effectiveness factors featuring in three internationally authoritative effectiveness syntheses. Chapter 4 outlines the qualitative study on school leaders' personal beliefs and the motives behind their school intervention decisions. Chapter 5 analyzes school leaders' use of evidence in their school intervention decisions. Chapter 6 concludes by recapitulating and discussing the main findings of this dissertation.

2

Chapter 2

The construction of an empirically based classification of school interventions and the application of this classification to the distribution of current Dutch secondary school interventions

2.1 Introduction

Over recent decades, countries all over the world have aligned their education systems with the path of increasing school autonomy alongside more rigorous accountability (Cheng et al., 2016; OECD, 2012). While debates on educational governance have pushed ideas on autonomy and accountability forward (Theisens, Hooge, & Waslander, 2017), large-scale international comparative studies are used as support (OECD, 2011). Mainly based on data from OECD's Programme for International Student Assessment (PISA), researchers have concluded that education systems perform better if schools can decide which textbooks they want to use, which teachers they want to hire, and how they want to spend their budgets. School autonomy only leads to better performance, however, in systems with rigorous accountability (Fuchs & Woessmann, 2007).

The concept of school autonomy requires specification, as differences between countries are substantial (OECD, 2011, 2012). While Shanghai-China combines high levels of school autonomy in the area of resource allocation with low levels of autonomy in the area of curricula and assessment, the exact opposite is the case in Korea and New Zealand. In the Netherlands, schools have high levels of autonomy when it comes to the hiring and firing of teachers, while schools in Greece and Italy have no such authority. Such specification is all the more important as school autonomy plays out differently for developing and developed countries (Hanushek et al., 2013), and particular combinations of autonomy and accountability may either boost or diminish educational equity (Werfhorst van de & Mijs, 2010). Testifying to this much-debated issue is the fact that policies are vastly different. While schools in Poland saw their levels of autonomy in resource allocation decrease quite dramatically between 2000 and 2009, Italian schools were granted much more autonomy during those years (Hanushek et al., 2013).

The concept of school autonomy also requires qualification. Research has made very clear that policies intended to enhance school autonomy do not necessarily lead to autonomy in practice. The key question is whether and how autonomy opportunities are enacted in schools, particularly by school principals (Agasisti et al., 2013; Ball, Maguire, & Braun, 2012; Shirley, 2016). As of yet, surprisingly little is known about how schools in different countries actually use their decision-making authority.

In this highly contentious field, there is a pressing need to advance our knowledge of the advantages and disadvantages of school autonomy and the specific forms of school autonomy that result in better outcomes for students. A hindrance to achieving this goal is the lack of an adequate and widely used set of definitions. Current indicators used to capture school autonomy are insufficient and give rise to flawed conclusions

(You & Morris, 2016). An extensive review of the literature did not reveal any existing classification adequate for capturing the actual exercise of school autonomy. A growing international knowledge base requires a classification scheme to distinguish the relevant areas of school autonomy in sufficient detail that researchers can use in a wide range of contexts. This chapter presents the empirical construction of such a classification.

Key questions underlying the classification are as follows: What school interventions do schools consider and introduce in a context of increasing school autonomy and intensified accountability? Which areas of school autonomy do schools exercise in practice? To answer these questions, the researcher carried out a study in the Dutch secondary education system. Together with a handful of other systems, schools in the Netherlands "enjoy the greatest autonomy" in the world (OECD, 2016b). There is no national curriculum, and schools are largely free to choose what to teach and how to teach it. Dutch schools have extensive freedom on matters regarding the organization of instruction, personnel management, and resource management (OECD, 2012). This high level of school autonomy makes the Dutch education system an exemplary setting to study the potential range of school interventions.

In a deliberate attempt to grasp the full range of potential school interventions in practice, the researcher composed a digital questionnaire with open-ended questions. For the same reason, a *school intervention* was broadly defined as a planned action intended to cause change in the school. The questionnaire was distributed among school leaders, as the school leader is the person with the ultimate process responsibility for school operations (Pont et al., 2008) and, as such, the executive or final arbiter of decision-making at the school level (Spillane & Lee, 2014). In total, 196 school leaders replied to the questionnaire, providing information on 735 school interventions.

The classification presented in this study[8] enables the identification, analysis, and comparison of school autonomy as enacted in schools. To begin, it permits the categorization and analysis of the school interventions currently considered and pursued by Dutch secondary school leaders. The classification can be used on the local, national, or international level by practitioners, policy-makers, training institutes, and researchers alike in their joint quest for "continuous improvement in the quality of education" (UNESCO Education Sector, 2016). Accumulating knowledge regarding the actual exercise of school autonomy—both within and across education systems—is expected to further understandings of potential levers of school improvement, school effectiveness, and educational change internationally.

8 This chapter is based on Neeleman (2019). "The scope of school autonomy in practice: An empirically based classification of school interventions." *Journal of Educational Change*. doi:10.1007/s10833-018-9332-5

The following section (2.2) introduces the theoretical background of this study. The relevant key concepts and contextual elements that underlie this study have been described in Sections 1.2 and 1.3, respectively. In Section 2.3, the methodological approach is elaborated. This section includes a detailed description of the construction and distribution of the questionnaire, the school leader sample, the school intervention dataset, and the construction and validation of the classification. The actual classification, including definitions and examples, is presented in Section 2.4. Section 2.5 displays the distribution and analysis of all 735 school interventions that were either introduced or considered by the Dutch school leaders from the questionnaire sample. In the final section (2.6), the main findings of the study are summarized, the strengths and weaknesses of the classification discussed, and illustrations are given as to its use. The key concepts that underlie this study—*school autonomy*, *school intervention*, and *school leader*—have been defined in Section 1.2. Relevant characteristics of Dutch secondary education have been elaborated in Section 1.3.

2.2 Theoretical background

To define the key concepts underlying this study, the researcher conducted an extensive literature review on school autonomy, school interventions, and school leadership. The definitions that derived from that search (see Section 1.3) were used in the questionnaire and to demarcate the response group. Subsequently, these concepts were studied in the context of Dutch secondary school leaders (see Section 1.3).

To explore existing classifications in various educational research traditions and their applicability for categorizing the school interventions yielded by the questionnaire, the researcher carried out an additional search in the Education Resources Information Center (ERIC) collection using the following combinations of key words: "school and autonomy," "principal and autonomy," "head and teacher and autonomy," "school and leader and practice," "principal and practice," "principal and policy and practice," "school and leader and policy and practice," "school and policy and intervention," "school and leader and intervention," and "decision and making and school and leader." This search yielded 579 unique documents. All studies with abstracts referring to school autonomy, school policy practices, school (leader) decision-making, school functions, leadership practices, leadership time use, school improvement, interventions, or innovations (excluding single improvements, interventions, or innovations) were taken as a starting point to further explore suitable classifications. The studies that provided such classifications are presented in Table 2.1, which organizes them by research discipline in alphabetical order.

Educational (school) change	Earley (2013); Frederiks and Bie de (2004); Fullan (1998, 2001); Hargreaves and Goodson (2006); Kärkkäinen (2012); Lagerweij and Lagerweij-Voogt (2004); Leune (2001); Regtering and Broek van den (2011); Slavin (2005); Vieluf, Kaplan, Klieme, and Bayer (2012); Vodegel, Bosch van den, and Smid (2015); Wonderen van (2004); Wrigley (2011)
(Educational) innovations	Blank, Haelermans, and Van Hulst (2009); Busman, Horsmans, Klein, and Oomen (2007); Busman, Klein, and Oomen (2006); Emmelot, Ledoux, Veen van der, and Breetvelt (2008); Frederiks and Bie de (2004); Hofman, Hofman, Dijkstra, Boom de, and Meeuwisse (2007); House (1974); Kärkkäinen (2012); Klein, Oomen, and Linden van der (2008); Lagerweij (1987); Lubienski (2009); OECD (2014b); OECD/Eurostat (2005); Regtering and Broek van den (2011); Scheerens (2010); Verbiest (2011); Vodegel et al. (2015); Waslander (2007); Wonderen van (2004)
Leadership practices: roles and behaviors	Adamowski, Bowles Therriault, and Cavanna (2007); Andersen and Krüger (2013); Barnett (2000); Bird et al. (2013); Cheng (2002); Day, Gu, and Sammons (2016); Dempster (2009); Earley (2013); Hallinger (2003); Hendriks and Scheerens (2013); Hendriks and Steen (2012); Krüger and Scheerens (2012); Leithwood (2005); Leithwood, Day, Sammons, Harris, and Hopkins (2006); Leithwood and Jantzi (1999); Leithwood, Seashore Louis, Anderson, and Wahlstrom (2004); Marzano, Waters, and McNulty (2005); May, Huff, and Goldring (2012); OECD (2014c); Pont et al. (2008); Robinson et al. (2009); Robinson, Lloyd, and Rowe (2008); Scheerens and Steen (2012); Schmidt (2009); Townsend and MacBeath (2011)
Leadership practices: time use	Bristow, Ireson, and Coleman (2007); Earley (2012); Earley and Bubb (2013); Grissom, Loeb, and Mitani (2015); Lee and Hallinger (2012); OECD (2014c)
Organization development in schools	French and Bell (1999); Fullan, Miles, and Taylor (1980); Schmuck and Miles (1971); Schmuck and Runkel (1985)
School autonomy and decision-making discretion	Anderson (2005); Bolam (1993); Galway and Sheppard (2015); Glatter (2002); Hanushek et al. (2013); Leune (2001); Levacic (2002); Maslowski, Scheerens, and Luyten (2007); OECD (2011, 2012, undated); Paletta (2014); Smith (2011); Steinberg (2012); Triant (2001); Wildy et al. (2004); Wohlstetter, Wenning, and Briggs (1995)
School effectiveness	Creemers and Kyriakides (2010); Creemers and Reezigt (1997); Hattie (2009); Hendriks and Scheerens (2013); Kyriakides, Creemers, Antoniou, and Demetrioua (2010); Kyriakides and Tsangaridou (2008); Marzano (2003); Reynolds (2000); Reynolds et al. (2014); Scheerens (2016)
School improvement	Barth (1990); Creemers and Reezigt (1997); Hopkins (2001); Hopkins and Levin (2000); Hopkins and Reynolds (2001); Hopkins, Stringfield, Harris, Stoll, and Mackay (2014); Mourshed, Chijioke, and Barber (2010); Reynolds, Teddlie, Hopkins, and Stringfield (2000); Seashore Louis (2005); Seashore Louis, Toole, and Hargreaves (1999); Wrigley (2008)

Table 2.1: Studies with potentially suitable classifications for the categorization of the school intervention dataset, organized by research discipline in alphabetical order.

To display the data (see Section 2.3 for information on the methodological approach), the researcher employed the classifications from the studies presented in Table 2.1 for a first, rough categorization. However, the classifications were, for various reasons, found insufficient to distinguish the school interventions conveyed by the school leader respondents. The classifications' generic features and limitations in the context of this study are presented in Table 2.2, which again organizes them according to research discipline.

Educational (school) change	The classifications in these studies focused on change in the educational domain (i.e., change related to educational processes). In this dissertation, school intervention practice also included school change related to organization and staff domains. The scope of these classifications hence proved too narrow for categorizing the complete school intervention dataset.
(Educational) innovations	The classifications in these studies focused on school interventions aimed at innovation. As defined in this dissertation, school interventions do not necessarily or solely focus on innovation. The scope of these classifications therefore proved too narrow for categorizing the full school intervention dataset.
Leadership practices: roles and behaviors	School leaders' roles and behaviors have certain commonalities with school interventions executed by school leaders. However, roles and behaviors are different ordering categories than interventions. Consequently, various classifications in this field contained categories that were not recognized in the school intervention dataset. Examples of such categories are role modelling, flexibility, and beliefs. Additionally, other classifications in this field covered most or all of the school interventions but used few categories—with very broad definitions—and hence lacked sufficient depth and detail to allow for meaningful distinctions.
Leadership practices: time use	Leadership practices with regard to time use have commonalities with school interventions, as both center on actions or activities. Leadership time-use practices, however, tend to focus on those activities performed by school leaders themselves. The school interventions yielded by this dissertation's questionnaire may be intended for, or performed by, others in the school. For this reason, leadership time-use classifications proved too narrow in scope for categorizing the complete school intervention dataset.
Organization development in schools	The classifications in these studies primarily emphasized organizational development implementation designs and processes in schools, rather than the specific content of actual improvement efforts. For this reason, they were too generic for categorizing the school interventions from the dataset.
School autonomy and decision-making discretion	The classifications in these studies were either too confined in scope (e.g., reflecting the narrower range of school autonomy in a particular education system) or displayed few categories—with very broad definitions—resulting in insufficient depth and detail for meaningful distinctions.
School effectiveness	Since school interventions include a wider range of activities than those that have thus far been subject to (meta-) effectiveness research, the categorizations in these studies proved too limited in scope for this specific dataset.
School improvement	The classifications in these studies were either too confined in scope (e.g., reflecting the narrower range of school autonomy in a particular education system) or displayed few categories—with very broad definitions—resulting in insufficient depth and detail needed for distinctions.

Table 2.2: Generic features and limitations of the classifications from the studies presented in Table 2.1, organized by research tradition.

As Table 2.2 testifies, current classifications stem from multiple research traditions, each emphasizing a particular area of responsibility. Each scheme serves its primary purpose within its own field of study. When shifting the perspective to a broad definition of school interventions and to school leaders, who bear the responsibility for a wide range of interventions, the researcher found that the existing classifications fell short. They were either too detailed in one area or too broad in another. In other cases, schemes excluded

whole areas of responsibility altogether. Combining existing classifications proved highly challenging because each tended to follow its own structure, abstraction level, and logic. Therefore, a completely new empirically based classification was constructed: one that provides sufficient breath to capture the whole range of school interventions, along with enough depth and detail to allow for meaningful distinctions. That scheme also features a clear logic and structure to enhance usability. The classification was constructed based on the school interventions captured during the field-work phase of this study and in continuous dialogue with school leaders. It thus reflects decision-making responsibilities at the school level as perceived by Dutch secondary school leaders. The following section elaborates on the approach used to construct and validate the classification.

2.3 Methodological approach

First, the general principles underlying this study's mixed-methods approach are clarified in Section 2.3.1. Subsequently, the various elements of that approach—drafting the questionnaire (2.3.2), collecting the data (2.3.3), reducing and displaying that data (2.3.4), and drawing and verifying conclusions (2.3.5)—are described in more detail.

2.3.1 Mixed-methods approach

This study's mixed-methods approach followed the "three concurrent flows of activity" of analysis—data reduction, data display, and the drawing and verification of conclusions—as discerned by Miles and Huberman (1994, pp. 10-11). This procedure was adopted due to the iterative character of the combined activities. In this sequence, which started with exploratory fieldwork in search of conceptualizations and shared meanings (Babbie, 2004), a quantitative instrument (i.e., a questionnaire) with a qualitative design (i.e., open-response questions) was used to gather data on the unit of analysis: school interventions. As the goal was to consider the full potential scope of school interventions, it was deemed essential to avoid predefining or limiting the input beforehand, as the spectrum of such interventions was expected to be diverse, and perhaps even unexpected. For this reason, the questionnaire was based on open-response questions.

To increase the study's face and content validity (Babbie, 2004; Bartlett & Burton, 2012), the researcher actively involved school leaders in all stages of the study (i.e., not only in elaborating the study's aim, context, and key concepts but also in drafting the questionnaire, testing the instrument, interpreting the outcomes, and constructing and refining the classification). This study rests on the assumption that a classification used to identify and analyze the actual exercise of school autonomy should ideally be based on ongoing consultations with school leaders—the interpreters of school autonomy—

throughout the entire construction phase. This continuous dialogue meant that school leaders' practical experiences served both as the beginning and end of the construction process. The various elements of the mixed-methods approach are explained in more detail in the following sections.

2.3.2 Drafting the questionnaire

A digital questionnaire was used for the large-scale collection of data on school interventions among school leaders. Unlike qualitative research instruments, such as interviews and observations, a questionnaire can potentially gather input from a relatively large number, variety, and random assortment of respondents in a comparatively short time span (Bartlett & Burton, 2012). The first draft of the questionnaire was tested by means of semi-structured interviews with two chairpersons of executive boards and one middle manager from secondary education, as well as with one chairperson of an executive board and three school leaders from primary education. To prevent any biases, which could have limited the pool of potential secondary school leader respondents, the researcher made a deliberate choice to test and discuss various questionnaire drafts with both other individuals in secondary education managerial positions and primary education school leaders. Since this study could have been carried out in primary education with equal effectiveness, testing and discussing draft questionnaires with primary education school leaders appeared to be a sound way to prevent the exclusion of likely respondents.

The main aim of this series of interviews was to test the comprehensibility of the questionnaire's design and contents by means of member checks (Bartlett & Burton, 2012; Flick, 2009). During these interviews, the researcher orally posed the draft questions, and the participants verbally responded. All interviews provided ample time for the interviewees to make additional remarks and for the researcher to ask follow-up questions. Based on the interviewees' answers, remarks, and questions, the researcher shortened the questionnaire, rephrased various questions and definitions, and added an introductory text explaining the survey's aims and key concepts. For illustration, one rephrasing that resulted from these interviews concerned the definition of a school intervention. In the first draft of the questionnaire, an intervention was defined as a planned action intended to induce an improvement in a school. However, one of the chairpersons noted that the term *improvement* might cause "allergic reactions" among certain school leaders due to the connotation of accountability for educational outcomes. The interviewee expected that this association would hinder constructive responses to the questions and suggested the use of a more neutral term, such as *change*. Moreover, that participant pointed out that *change* is a more comprehensive term than improvement. In this respect, Cuban (1988, p. 341) mentioned that "change is

not necessarily improvement." Apart from a more neutral connotation, this broader definition of the unit of analysis was closely aligned with the study's aim of capturing the range of actual school interventions. The altered definition was thereafter tested in the other interviews. The observation was confirmed, and in consequence, the alteration was definitively applied.

An adjusted version of the questionnaire was tested in a series of four individual, semi-structured interviews with primary education school leaders. Each interview started with the interviewee completing the questionnaire in writing—without any oral explanations from the researcher. Subsequently, the researcher and the interviewee engaged in an exchange about the overall intelligibility of the questionnaire, its individual questions, the explanation of key concepts, and the introductory text. Each of the interviews was furthermore used to measure completion times and to test suggestions made by previous interviewees. Written and verbal input from the respondents again led to reconsiderations and subsequent adaptations regarding the phrasing of the questions, the key concepts, the introductory text, and the scope of the survey as a whole. An example of an adaptation was the restoration of several questions that had previously been deleted to keep the questionnaire manageable for the respondents in terms of the completion time. Various questions were restored when the first two interviewees both completed the questionnaire within five minutes. All suggested adaptations were tested in the successive interviews. The questionnaire thus evolved via an intense dialogue with school-level decision-makers.

2.3.3 Questionnaire distribution and responses

In total, 543 school leaders received a direct email invitation from the researcher to fill out the digital questionnaire. The names and email addresses were partly gathered from the network of the researcher and partly from a random internet search. In addition to being requested to complete the questionnaire, the school leaders were asked to forward the invitation to other school leaders in their networks. The invitation clearly stated what type of school leader—those with the ultimate process responsibility for their school location(s)—was invited to participate in. Names and email addresses of executive board members and other functionaries (middle leaders and staff officials) were also collected—again, from both the researcher's network and a random internet search—and those individuals were asked to forward the invitation to school leaders in their organizations and networks. The distribution of invitations sent by the researcher is presented in Table 2.3.

Invitations sent to:	Number	Total
School leaders from network	57	
School leaders from random internet search	486	
School leaders total		*543*
Executive board members from network	20	
Executive board members from random internet search	43	
Executive board members total		*64*
Other functionaries from network	37	
Other functionaries total		*37*
Total invitations sent[9]		**644**

Table 2.3: Distribution of the questionnaire invitations directly sent by the researcher.

After a round of reminder emails, 196 school leaders completed the questionnaire. Dutch legislation contains no regulations about school leaders, "neither about duties, functions or authority nor about the qualifications or quality and competences" (Bal & De Jong, 2007, p. 7). Consequently, no official distinction is made among the different hierarchical levels of school leaders. This means that the group of 3,227 people holding a "school management" position in 2013 (Stamos, 2015) included middle leaders: school leaders without the ultimate process responsibility for the school location(s). To estimate the number of school leaders falling within the school leader definition used in this study (see Section 1.3.3), the researcher used a database from the Dutch executive organization responsible for the financing of educational institutions (DUO). This database contained all secondary school locations (both main locations and branch locations); it counted 1,414 such sites as of July 1, 2015 (DUO, 2015). Following the definition of school leaders as those functionaries with the ultimate process responsibility for their school location(s), that number is likely to approximate the number of school leaders as defined in this study. Some school leaders are responsible for more than one school location, with no separate school leader at each site. Other school leaders are responsible for more than one school location featuring a separate school leader. The two organizational models likely exist in roughly equal numbers. Privately funded schools were not included in the file. Since these schools essentially offer the same types of education as publicly funded schools and also have to fulfil equal accountability demands, the 29 privately funded secondary school locations listed on the national website of privately funded education (Private Education in the Netherlands, 2015) were included in the study. Together, this resulted in 1,443 secondary school locations.[10] This number is likely to approximate the number of school leaders with ultimate process responsibility in Dutch secondary

9 The 24 invitations that were not delivered due to an incorrect email address are not included in this table.

10 Secondary special education was not included in this research project, as that type of education falls under different legislation and accountability criteria.

education. Based on the figure of 1,443 secondary school leaders, approximately 14% of all Dutch secondary school leaders with ultimate process responsibility finished the questionnaire. Since each person who received an invitation was asked to forward the invitation to other school leaders in his or her network, determining the response rate was not possible.

Even though the population that received an email invitation was, by design, not completely random, the distribution of various Dutch secondary school characteristics across both the response group and school locations (DUO, 2015) did not demonstrate any substantial anomalies. With regard to the distribution of respondents over the 12 Dutch provinces, all territories were reasonably represented. The relatively high percentage of Limburg-based schools is attributable to the fact that the researcher's affiliation is situated in that region. All education types (e.g., public, private, religious) were represented among the respondents' schools, and the corresponding distribution did not exhibit any pronounced anomalies. The distribution of schools across Dutch educational tracks (e.g., vocational, general, combined) indicated a slightly larger divergence between the sample and the all-schools database than for the two previously mentioned school characteristics. Again, however, all the different tracks and combinations of tracks possible within the Dutch education system were represented among the respondents.

2.3.4 Data reduction, data display, and the drawing and verification of conclusions

The questionnaire asked the school leaders to list up to three school interventions that had been introduced in the past school year (2013–2014) or that were intended to start in the then-current school year (2014–2015). The respondents were also asked to list up to three school interventions that had been considered in the past or current school year but that were deliberately not introduced. This latter question was included to maximize the scope of potential school interventions and minimize any systematic biases concerning the exercise of school autonomy. The questionnaire collected a maximum of three interventions per question to ensure that it would be manageable and inviting for the respondents. These two open-response questions collected 595 interventions that either had been introduced or that were scheduled to be introduced and 140 interventions that had been considered but not introduced. Data reduction (Miles & Huberman, 1994) commenced for these 735 items.

After an extensive literature review and subsequent exploration of suitable existing classifications from the studies listed in Tables 2.1 and 2.2, the next step was to display the data on the actual school interventions captured by the questionnaire. Each intervention was grouped with thematically comparable interventions to form subdomains of school

interventions. Each subdomain was given a working title and working definition based on the characteristics of the assembled interventions. For the classification's structural logic, three overlying domains were added.

The verification (Miles & Huberman, 1994) of the various draft classifications was pursued via a series of semi-structured interviews with four secondary school leaders at different stages of the drafting process. The open-response design of the questionnaire had led to a rich but complex dataset. In an attempt to solicit diverse reflections on the drafts that originated from that dataset, the researcher contacted school leaders representing diverse school and school leader characteristics. Three of the four school leaders had participated in the questionnaire. These interviews were used, first, to verify the interpretation of the freely formulated school interventions to enhance the classification's face validity. Second, the interviews served to test the content validity of the classification—regarding the (sub)domains, definitions, and distribution of the school interventions—in the eyes of those exercising school autonomy.

Each interview started with a brief outline of the study's aim, followed by a presentation of the latest draft of the classification. The researcher subsequently provided an overview of the different domains and subdomains, the accompanying definitions, and the distribution of the school interventions per subdomain. In each interview, the school leaders were asked whether the distinctions among the various domains, subdomains, and definitions made sense from the perspective of their own school practice. The interviewees were also asked whether and how the classification could be further improved. Any suggestion made by an individual school leader regarding the classification's (sub)domains, definitions, or grouping of interventions was discussed with the school leaders in subsequent interviews. As such, none of the adaptations was based on singular insights or views. In the interviews, special attention was given to those (sub)domains, definitions, and intervention groupings that were questionable in the eyes of the researcher.

These interviews with the school leaders led, as expected, to adjustments to various aspects of the classification. For example, at the start of the drafting process, four main school intervention domains were distinguished: educational concepts, educational programs, organization, and staff. However, the interviewed school leaders unanimously expressed a strong preference for differentiating among only three main school intervention domains, namely, education, organization, and staff (see Table 2.4). All other decision-making areas, in their opinion, stem from one of those three fields. Interestingly, these three domains coincide with the three areas of school autonomy that the OECD (undated) defined in its Improving School Leadership project. A second

example of a practical adjustment concerned the organization domain. This domain was initially called "operational management." Multiple school leaders, however, indicated that this latter term evokes highly negative connotations among many educational practitioners for its perceived relation to business settings. For this reason, the school leaders strongly recommended using the term "organization" instead. A third example concerned one school leader's suggestion to replace the term "staff" in the corresponding domain with the—in his opinion—more appropriate term "employees." This suggestion was refuted by all of the other school leaders, and the term "staff" was maintained. Other adjustments stemming from the interviews concerned the extension or disentanglement of subdomains and the regrouping of school interventions.

2.3.5 Categorization of the items

For categorization purposes, each item was labelled only once. Despite the fact that some items showed kinship to more than one subdomain, classification took place on the basis of the core concept (word or phrase) of the item. For example, the item "introduction of a training program concerning pedagogics" relates to the two subdomains "professional autonomy and culture" and "pedagogical approaches." In this example, the training program was regarded as the core element of the item and the reference to pedagogics as a further specification of the training program. Consequently, this item was categorized as "professional autonomy and culture." Because not all items were embellished with additional information as in this example, a system of single labelling was considered the most straightforward option. Only in those cases in which a respondent put more than one distinctive intervention in one answer box—for example, "the introduction of a data team and a new assessment system"—was each distinctive item labelled separately. As a consequence of this labelling scheme, one could put forward two alternative ways of counting the interventions: an approach in which all distinctive items per answer box count as one intervention (full count) and an approach in which all distinctive items per answer box add up to one intervention (weight count). Since it was not possible for the researcher to define the weight of the individual items—in other words, the importance or relevance a school leader attached to the individual items—all findings are based on the full count approach.

2.4 The classification

Thus, starting from a set of definitions derived from a thorough literature review, rich data gathered from a considerable number of diverse school leaders by means of open-ended questions, an extensive exploration of the applicability of existing classifications, and an ongoing dialogue with school-level decision-makers, the researcher developed an empirically based classification of school interventions. The school leaders' suggestions

and the adaptations made throughout the verification process resulted in a classification of school interventions that adequately reflects the range and content of decision-making responsibilities and autonomy as perceived by Dutch secondary school leaders in their daily practice. This classification, which is presented in Table 2.4, is organized via the three main domains of education, organization, and staff. Each of these domains consists of various subdomains, with the entire framework composed of 16 such subdomains. Each subdomain is accompanied by a definition and a cross-section of corresponding school interventions from the dataset.

EDUCATION	
Subdomain	**Definition**
Pedagogical approaches	Interventions concerning the design or elaboration of (effective) teaching, learning, or educational processes in the direct interaction between teacher(s) and student(s). Interventions concerning what is often labelled as "classroom management" are included in this domain. *Examples[11]: interdisciplinary teaching; project-based education; demand-driven education; homework-free school; area-based learning; new didactic approaches; activating pedagogy; custom-made pedagogical approaches; personalized learning; dealing with differences; teaching children at their own level*
Educational programs	Interventions concerning lessons, subjects, courses, or programs offered in a school[12] (track) and formalized within the curriculum of a school (track). Interventions concerning formalized extracurricular activities are included in this domain. *Examples: bilingual education; additional subjects; culture profile school; technical profile school; personal development program; new literacy and numeracy program; anti-bullying program; more sports; talent program; extra attention to skills in the curriculum*
Systemic pathways	Interventions concerning the systemic pathways through the education system that transcend the boundaries of regular school tracks and moments of assessment or examination. *Examples: accelerated pathways to a diploma; possibility to obtain a secondary vocational education diploma at a pre-vocational secondary school; start of a mixed pre-vocational secondary education program; craftsmanship route; technology route; availability of secondary vocational education at own school by own teachers*
Learning environments and methods for teaching, learning, and assessment	Interventions concerning the learning environment and the methods and tools used for teaching, learning, and assessment, including digitalization. *Examples: new approach to assessment; new teaching method; evaluation of the assessment program; adapted learning environment; iPad class; bring your own device (BYOD); classroom laptops; laptop/tablet-oriented education; electronic learning environment; information technology applications*

11 All examples presented in Table 2.4 are derived from the questionnaire responses (translated from Dutch into English).

12 In all definitions, the term *school* also covers a *group of schools* or *institution*.

ORGANIZATION	
Subdomain	**Definition**
School culture	Interventions concerning the school's mission, vision, identity, culture, or image (positioning), including strategic policy-making. *Examples: recalibrating the school plan, mission, or vision; change in school culture; policy development; positive behavior support (PBS); The Peaceful School (a school identity program); re-profiling; non-smoking school*
Organizational structures	Interventions concerning the school's organizational structure(s). *Examples: changing the team or management structure; improving the functioning of the teams; clustering/merging of locations; changing the organizational model; reallocating staff across teams; more autonomy on the team level*
Organization of education	Interventions concerning the set of rules, procedures, or regulations related to the organizational design of education. *Examples: adapting procedures with regard to the repetition of classes, exam resits, student determination, or absence; change in class hours; class groupings*
Quality assurance	Interventions concerning all standardized activities to meet quality requirements and goals for services, activities, and products. This domain includes the use of research as an evaluation method, as well as outcome- or result-based working approaches. *Examples: introducing an outcome-based or result-based working approach; improvement programs for better educational outcomes; standardized assessments; improvement plans by teams; research on the educational pathways of migrant girls; school evaluation; monitoring social-emotional development; introduction of a data team*
Student care and support	Interventions concerning student-oriented care, guidance, or support. *Examples: developing additional care and support for pupils with special needs; introducing student coaching; more elements of the support structure in classrooms*
Stakeholder relationships	Interventions concerning the relationships with, or involvement of, the school's stakeholders, such as parents, primary and tertiary education, other secondary schools, the (local) community, or (local) industry. *Examples: increased cooperation with primary or tertiary education, parents, industry, community, or secondary schools (outside own educational institution); sharing science lab with primary education; participating in a network; staying in contact with community or society*
Financial resources	Interventions concerning the school's financial resources. *Examples: aiming for 'healthy' finances; drafting of a new financial framework; improving financial situation*
Facilities and accommodation	Interventions concerning the school's facilities or accommodation(s). *Examples: improvement to the building; school stewards; Wi-Fi throughout the entire building; providing laptops to all teachers*

STAFF	
Subdomain	**Definition**
Professional autonomy and culture	Interventions concerning the staff's professional autonomy or professional culture (behavior). This domain includes training and development activities and peer collaboration to increase the level of staff professionalism (capacity-building). *Examples: staff development project; training program with regard to new media; more professional autonomy for teachers; working towards a learning organization; stimulate an inquisitive mentality among teachers; strengthening school leadership; mutual teacher feedback; classroom visits by team leaders; peer reflection; cooperation within professional learning communities; on-the-job learning from peers; video interaction programs; peer intervision*
Teaching- and school- related assignments	Interventions concerning the distribution of teaching and other school-related duties and assignments. *Examples: recalibrating policies with regard to the distribution of teaching and other school-related duties and assignments; job-matching*
Staffing policy: assessment and payment	Interventions concerning staffing policy, assessment, or payment. *Examples: recalibrating staffing policies; (re)introducing the (performance management) review cycle; renewal of reward (payment) policies; introducing assessments*
Recruitment and employment	Interventions concerning recruitment or employment. *Examples: employing new staff members; recruiting staff with a university background; dismissing low-performing staff members*

Table 2.4: Classification scheme of school interventions.

2.5 Distribution of school interventions in Dutch secondary education

In responding to the digital questionnaire, 196 Dutch secondary school leaders entered 595 school interventions they had introduced in the past school year (2013–2014) or were about to introduce in the then-current school year (2014–2015), as well as 140 intervention they had considered in the past or then-current school year but had not introduced. The corresponding distributions are presented in Sections 2.5.1 and 2.5.2, respectively. Section 2.5.3 recounts the attempt to identify possible patterns in school leaders' intervention decisions by means of various regression analyses.

2.5.1 Distribution of introduced school interventions

Figures 2.1 presents the distribution of all 595 school interventions that had been introduced or that were scheduled for introduction across the classification's 16 subdomains. The different shades of the bars refer to the classification's three main domains: education (dark gray), organization (black), and staff (light gray).

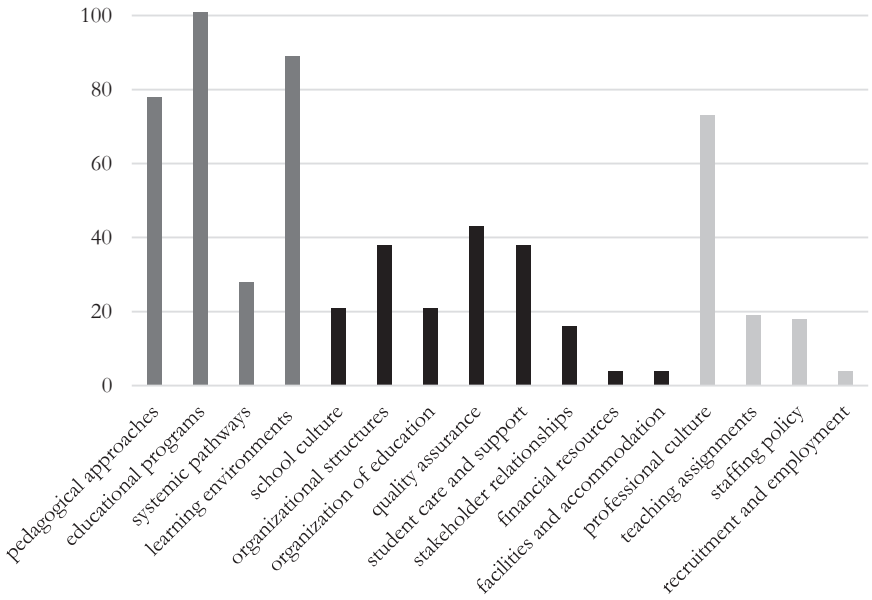


Figure 2.1: Distribution of the 595 school interventions that had been introduced or that were scheduled for introduction across the classification's 16 subdomains.

Figure 1 shows a clear dominance of four subdomains: educational programs, learning environments, pedagogical approaches, and professional culture. These four subdomains comprise 57% of all school interventions that are introduced in Dutch secondary education. Three of these four subdomains are educational in nature. Systemic pathways is the only educational subdomain with substantially lower coverage. In the organizational domain, interventions related to organizational structures, quality assurance, and student care and support are more frequent than interventions in the other five organizational subdomains. The subdomains teaching assignments and staffing policy in the staff domain exhibit similar frequencies as do these five organizational subdomains. Three subdomains have scant representation: Financial resources, facilities and accommodation (both organizational), and recruitment and employment (staff) each contain only four interventions. What Figure 2.1 does not show, but what can be derived from the school intervention dataset, is that three school interventions[13] in particular were frequently implemented: (1) digital tools and methods for teaching and learning (subdomain learning environments) covered 11.6% of all interventions; (2) peer professionalization (subdomain professional autonomy and culture) 6.7%;

13 These three common school interventions are collective constructs used to categorize similar concepts encompassed in the school intervention dataset.

and (3) interventions concerning differentiation, individualization, and personalization (subdomain pedagogical approaches) 6.1%.

To give a clear overview of the distribution of the interventions across the three main intervention domains—the main domain organization consists of twice as many subdomains as do the education and staff domains—Figure 2.2 displays the distribution of the 595 interventions over the three main domains as percentages of all listed interventions.

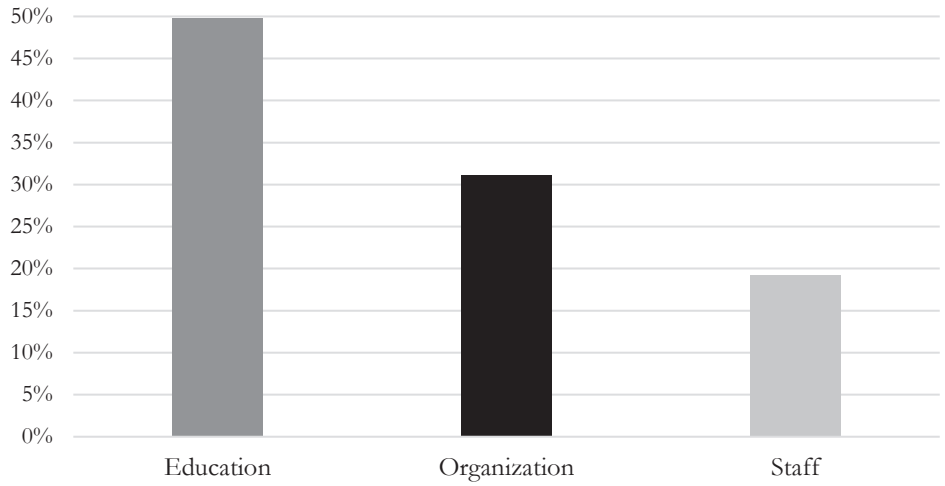


Figure 2.2: Distribution of the 595 school interventions that had been introduced or that were scheduled for introduction across the classification's three main domains as percentages of all listed interventions.

Figure 2.1 and 2.2 both show a clear dominance of interventions in the educational domain: 49.7% of all introduced school interventions were educational in nature. Figure 2.2 additionally shows that interventions in the organizational domain (31.1%) were more frequent than those in the staff domain (19.2%).

2.5.2 Distribution of considered school interventions

Figure 2.3 presents the distribution of the 140 interventions that school leaders had considered but not introduced across the 16 subdomains.

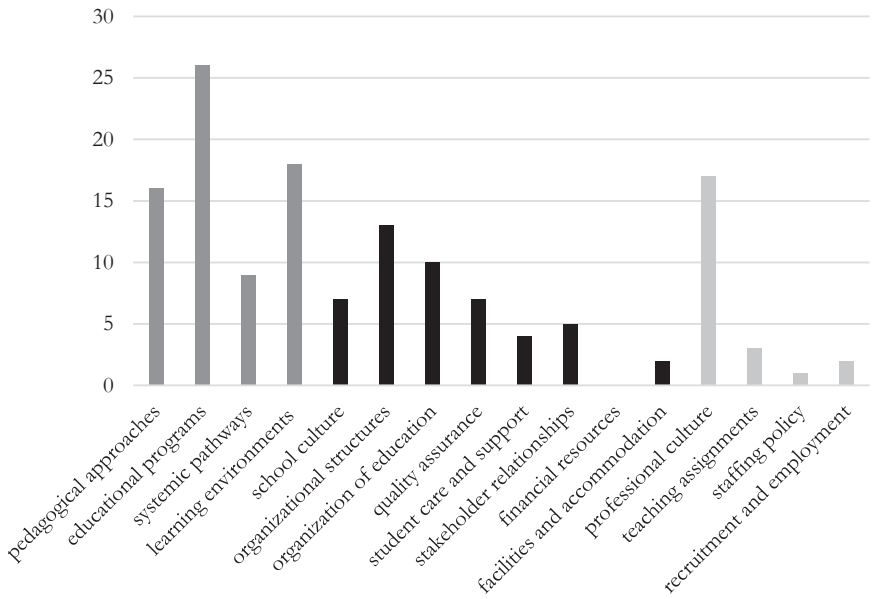


Figure 2.3: Distribution of the 140 school interventions that were considered but not introduced across the classification's 16 subdomains.

Figure 2.3 indicates a similar distribution of the four most frequent school intervention subdomains. This means that educational programs, learning environments, pedagogical approaches, and professional culture are the dominant areas of focus in terms of Dutch secondary school leaders' intervention decisions. The only other two domains that account for 10 or more interventions are organizational structures and organization of education. Interventions in the other subdomains are even scarcer. This could mean that when interventions in these subdomains are considered they are also very likely to be introduced. Alternatively, it could mean that interventions in these subdomains are generally considered less often and hence introduced in lower numbers. For those subdomains with low frequencies in both distributions, the latter interpretation seems more likely. Subdomains with more dissimilar distributions are more likely to be explained by the former line of reasoning. This situation only concerns the subdomain of student care and support. This subdomain represents 6.4% of all introduced interventions but only 2.9% of all considered but not introduced interventions.

Figure 2.4 displays the distribution of the 140 considered but not introduced interventions across the three main domains as percentages of all listed interventions.

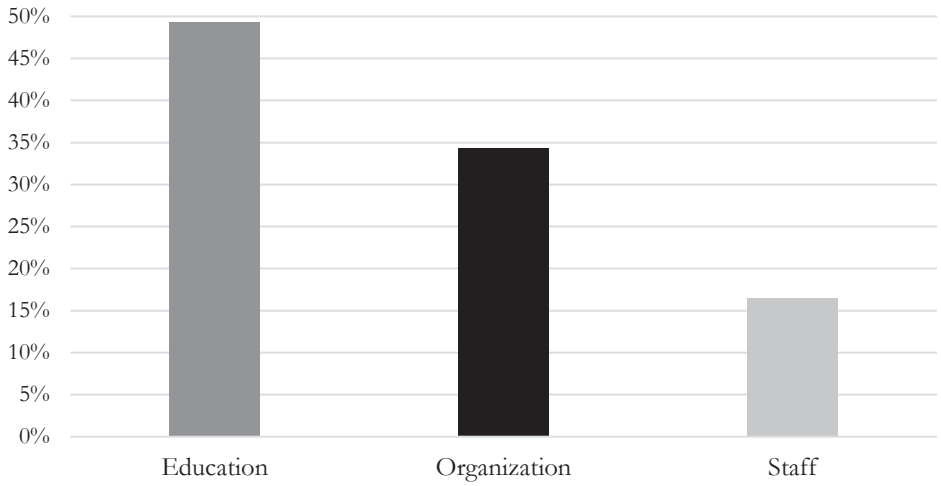


Figure 2.4: Distribution of the 140 school interventions that were considered but not introduced across the classification's three main domains as percentages of all listed interventions.

Figure 2.4 shows a similar distribution of the interventions that were considered but not introduced to that for introduced interventions (Figure 2.2). Again, interventions in the educational domain account for nearly 50% of all interventions. Interventions in the organizational domain are slightly more dominant in this distribution (34.3%) than in that for introduced interventions (31.1%). This increase, of course, was at the expense of interventions in the staff domain, which constitute 16.4% of interventions that are considered but not introduced, compared to 19.2% of introduced interventions.

2.5.3 Regression analyses

In an attempt to identify possible patterns in school leaders' intervention decisions, the researcher conducted various regression analyses with characteristics of the school and the school leader as independent variables and the intervention (sub)domains as dependent variables. The school and school leader characteristics included years of school leader experience, number of school locations under responsibility, school location (town and province), number of students, student number trend (decline, stable, or increase), school type (e.g., public, confessional, or private), education concept (e.g., "traditional," Montessori, Waldorf), and available tracks (practical education to university preparatory education). Interventions were distinguished at the domain and subdomain levels. Any significant relation between dependent and independent variables would have indicated that interventions in specific (sub)domains are related to characteristics of schools and/or individual school leaders. None of the regression analyses, however, yielded meaningful, significant outcomes. This outcome implies that

none of the included school and school leader characteristics are related to the likelihood of interventions in specific (sub)domains being initiated.

2.6 Conclusion and discussion

In many countries, education systems are moving toward increased school autonomy and intensified accountability (Cheng et al., 2016; Helgøy et al., 2007). Consequently, most decision-making occurs at the school level (Imants, Zwart, & Breur, 2016), and the role of the school leader has grown in importance (OECD, 2016a). Surprisingly little is known about how schools and school leaders actually exercise school autonomy. To advance our knowledge in this field, an adequate classification is needed to capture the full range of school interventions in practice. An extensive review of the literature from various educational research disciplines revealed that none of the existing taxonomies meet the requirements.

This chapter has presented the construction and validation of an empirically based classification of school interventions that allows for the identification, analysis, and comparison of the actual use of school autonomy. The classification is based on the responses of almost 200 secondary school leaders who reported a total of 735 interventions. The study was set in the Netherlands which is known for its high level of school autonomy (OECD, 2014a). To achieve practical (i.e., face and content) validation of the classification, the researcher actively involved school-level decision-makers in all stages of the project. Consequently, the classification can capture a wide range of school interventions, has depth and detail to allow for meaningful distinctions, and features a logic and structure to enhance its wide usability at the local, national, and interventional levels.

The analysis of the school intervention dataset using the classification showed a clear dominance of educational interventions in Dutch secondary education. Nearly half of all interventions that are introduced or considered but not introduced are educational in nature. Organizational interventions are, in turn, more frequent than staff interventions. There is a clear dominance of four subdomains: educational programs, learning environments, pedagogical approaches, and professional culture. These four subdomains—three of which are educational—comprise nearly 60% of all school interventions that Dutch secondary school leaders introduce or consider but ultimately do not introduce. The following three pursued school interventions occur at particularly high frequencies: digital tools and methods for teaching and learning; peer professionalization; and interventions concerning differentiation, individualization,

and personalization. These three interventions together account for nearly 25% of all pursued interventions.

Despite the deliberate effort to construct a comprehensive classification suitable for international use, the proposed classification has certain limitations. First, the classification was constructed in one particular setting. Although Dutch secondary schools enjoy a very high level of school autonomy and have done so for a long time, that does not necessarily imply comprehensiveness. Schools in other education systems—even in those with a lower level of autonomy—may have decision-making authority in areas that Dutch schools do not.

Second, even though professionals from primary education were involved in the study's design and the refinement of the questionnaire, the dataset only included interventions in secondary schools. Small adaptations may be required for adequate use in primary education. Third, the classification is based on contemporary school interventions. For future use, the scope of the domains or subdomains may need adjusting.

The classification surely does enable important steps toward advancing our knowledge of school autonomy. The following examples illustrate its potential uses: The (sub) domains can be a starting point for the first cycle coding of interviews (Miles et al., 2014) with school leaders. Distributions may further our understanding of how novice and experienced school leaders exercise their decision-making authority in diverse international jurisdictions (Spillane & Lee, 2014). The classification can also be used for in-depth comparisons between schools operating under different autonomy regimes, such as public schools and charter schools in the United States (Gawlik, 2008). The available Dutch secondary school intervention data enables first comparisons on all the above-mentioned characteristics. For large-scale data collection, researcher could base the construction of questionnaires and indicators on this classification. This framework will make sense to school leaders, capture sufficient detail, and allow for aggregation and comparisons within and across countries. These features will result in a more sophisticated description of school autonomy in different jurisdictions, which is needed to deepen our understanding of which particular combinations of high and low levels of school autonomy are likely to improve educational outcomes (Woessmann et al., 2009) while diminishing inequality? (Werfhorst van de & Mijs, 2010). In sum, this comprehensive classification may act as a stepping stone to making real progress in the much-debated field of school autonomy.

3

Chapter 3

The relationship between actual school interventions and factors found in educational effectiveness syntheses

3.1 Introduction

Since the 1980s, decision-making responsibilities have gradually been decentralized to schools in most education systems (e.g., Cheng et al., 2016; OECD, 2012; Woessmann et al., 2009). The main rationale behind decentralization is that local decision-makers possess a clearer understanding of local problems, priorities, and capacities than their national-level counterparts. This local expertise is expected to lead to better decisions regarding resource allocation, school improvement, and alignment with local demands (Hanushek et al., 2013). To counterbalance this increasing school autonomy and reclaim a degree of control, many central governments have centralized accountability standards in areas such as target setting, performance measurement, and the use of quality indicators (Helgøy et al., 2007). Selecting an approach to meet these standards, however, remains largely the responsibility of schools (Imants et al., 2016; Keddie, 2014). This factor, along with the trend toward decentralization, has meant that decision-making responsibilities at the school level have substantially expanded in most education systems in recent decades.

School leaders are the executives or "final arbiters" (Spillane & Lee, 2014) of decision making at the school level. Decades of EER have illustrated that while schools and school leaders can make a difference in terms of enhancing student achievement, not all interventions are equally effective in that respect (e.g., Hattie, 2009; Robinson et al., 2009; Scheerens, 2016). At the heart of EER are two foundational questions: "What makes a 'good' school?" and "How do we make more schools 'good?'" (Reynolds et al., 2014). Educational effectiveness research has provided evidence regarding those interventions that "make a good school." The expanding EER knowledge base, moreover, offers indications of which school interventions are more effective[14] than others. Whether school leaders act in accordance with this knowledge base is an interesting question about which little is known. Do the interventions that take place in school practice reflect the findings of the EER literature? In those cases where analogies are present, the question arises of whether the resemblance is a particularly close one, with a high degree of likeness between practice and theory, or whether the parallel is more general. Likewise, whether those school interventions that are introduced in practice are those with relatively high effect sizes is another relevant question. Considering EER's foundational questions and policy-makers' assumption that increased school autonomy leads to improved student achievement, one would expect a considerable congruence between actual school interventions and those factors with higher effect sizes.

14 Although *educational effectiveness* can be defined and interpreted in many ways, whenever the term *effective* is used in this study, it should be understood from an EER perspective as referring to the enhancement of student achievement. Effectiveness is often measured via cognitive outcomes in core subjects, such as reading, language, and mathematics (Huber & Muijs, 2010; Scheerens, 2016).

To study the extent to which this assumption holds for the interventions that Dutch secondary school leaders initiate, this chapter presents a comparative analysis contrasting the school intervention data set from Chapter 2 with the effectiveness factors that feature in three internationally authoritative educational effectiveness syntheses: Robinson et al. (2009), Scheerens (2016), and Hattie (2009). The comparative analysis provides additional insight into school leaders' actual exercise of school autonomy.

A brief recapitulation of the school intervention dataset, the choice of EER syntheses, and the comparative approach is outlined in the methodological approach section (3.2). Section 3.3 presents the findings of the comparative analysis. The main findings are summarized in Section 3.4 and discussed in Section 3.5. This final section also contains observations about the limitations of this study.

3.2 Methodological approach

Section 3.2.1 reviews the main characteristics of the school intervention dataset. Section 3.2.2 presents arguments for the decision to use synthesis studies for the comparative analysis in general and the three selected syntheses in particular. The key concepts that underlie this study—*school autonomy*, *school intervention*, and *school leader*—have been defined in Section 1.2. The relevant characteristics of Dutch secondary education have been elaborated in Section 1.3.

3.2.1 School intervention dataset

The dataset of current Dutch secondary school interventions was derived from a digital questionnaire with open-ended questions that was completed by 196 school leaders. The questionnaire asked the school leaders to list up to three school interventions that had been introduced in the previous school year (2013–2014) or that were about to be introduced in the then-current school year (2014–2015). As elaborated in Chapter 1 (Section 1.3.2), a *school intervention* was broadly defined as a planned action intended to cause a change in the school. This change could take the form of an adjustment to current school practices or the introduction of a completely new practice. A broad definition was employed to capture the full thematic range of school interventions. To avoid predefining or limiting the school leaders' input, the researcher formulated the question in an open-ended manner. The maximum number of interventions was capped at three to ensure that the questionnaire would remain manageable for the respondents. In total, 196 school leaders contributed 595 school interventions. Details about the data set and the distribution of the 595 interventions are found in the methodological approach Section (2.3) of Chapter 2.

3.2.2 Choice of educational effectiveness research syntheses

The EER literature studies a wide range of factors that are likely to affect student achievement. This spectrum includes areas such as teaching approaches, the curriculum, school organization, and educational leadership. Scheerens (2016, p. 105) has stated that "The major task of educational effectiveness research is to reveal the impact of relevant input characteristics on output to 'break open' the black box in order to show which process or throughput factors 'work', next to the impact of contextual conditions". In the course of the last decades, many such factors have been identified. Most EER studies have predominantly focused on student achievement as measured via cognitive outcomes in core subjects such as language and mathematics (Huber & Muijs, 2010; Scheerens, 2016). The three syntheses used in this comparison adopted the same approach.

Meta-analyses are comprised of multiple individual rigorous studies, and as such, they present robust results regarding the effectiveness of the items in question. Consequently, such analyses "produce more widely applicable and generalisable inferences than would be possible from a single study" (Higgins, 2016, p. 32). That said, meta-analyses also have limitations in terms of evaluating educational effectiveness. For example, studies included in a synthesis may differ widely with regard to methodologies and research populations and the use of general terms for what may be a wide variety of interventions or concepts. Moreover, the underlying studies can be relatively dated, and variables other than those explicitly measured (e.g., personal background, teacher, class, school, or system) may have affected the outcomes of individual studies in divergent manners (Higgins, 2016; Terhart, 2011; Valentine, Pigott, & Rothstein, 2010). Despite these limitations, Higgins (2016, p. 40) has reported that "the data from meta-analysis offer the best source of information to address cumulative questions about effects in different areas of educational research." For this reason, only synthesis studies were incorporated into this explorative comparative analysis. Since no syntheses exist exclusively focused on Dutch secondary education research,[15] three internationally authoritative studies were selected. To analyze the interventions from both a school perspective and a school leadership perspective, the researcher used syntheses from both effectiveness traditions.

The items in the school intervention dataset were first compared to the leadership factors[16] in *School Leadership and Student Outcomes: Identifying What Works and Why – Best Evidence Synthesis Iteration* (Robinson et al., 2009). This synthesis is considered a cardinal work in the EER tradition because it "introduced the educational leadership

15 The majority of studies that underlie EER syntheses were conducted in an English-speaking primary education context (Scheerens, 2016). This was likewise the case for the three syntheses used in this study's comparative analysis.

16 All three syntheses used different terms for their organizing principles. Hattie (2009) spoke of "conditions," Scheerens (2016) of "effectiveness enhancing factors," and Robinson et al. (2009) of "dimensions." In this study, the term factors is used to cover all references, including those with negative effect sizes.

community at large to effect sizes" (Eacott, 2017, p. 417). It subsequently shaped dialogue and debate in educational administration (Eacott, 2017). The authors introduced five factors based on direct evidence and three variables based on indirect evidence to identify the impact of educational leadership on student outcomes. These latter three factors were not accompanied by effect sizes.

For the subsequent analysis from a school effectiveness perspective, the researcher used Scheerens' (2016) *Educational Effectiveness and Ineffectiveness—A Critical Review of the Knowledge Base*. As compared to the other two syntheses, both of which were published in 2009, Scheerens' work offered a recent review of the effectiveness knowledge base. He listed the variables that had received the most significant backing within the empirical EER literature and included these factors in two new meta-analyses, one at the school level and one at the classroom level. In both meta-analyses, Scheerens additionally distinguished among various moderator variables, such the education stage (primary or secondary), the country in which the study was conducted (United States, the Netherlands, or other), and the kinds of tests used to assess student achievement (language based, mathematics based, or other).

The presence of the moderating context variables for secondary education and the Netherlands made Scheerens' review even more suitable for a comparison with the Dutch secondary education dataset. Within the comparative analysis, the effectiveness-enhancing factors at the school level[17] were combined with two classroom-level factors that have implications at the school level.[18] This resulted in 12 effectiveness-enhancing factors. The effect sizes that accompany each of these factors in this chapter are moderated for the variables "secondary" and "the Netherlands" (Scheerens, 2016, p. 186).

Finally, Hattie's *Visible Learning* (2009) provided a set of 138 "contributors to learning." Most of these factors were specific, which facilitated more detailed comparisons than those enabled by the more general factors outlined in the two previous syntheses. According to Terhart (2011, p. 433), *Visible Learning* is "a broad and comprehensive, synthesizing view of empirical research on schools, teachers and teaching [that] is hitherto unique." [19] As Eacott (2017, p. 418) has noted:

17 The exact number of factors at the school level varied from 12 to 14 throughout the review. For the comparative analysis, the 10 school-level variables presented in Table 8.7 (in Scheerens, 2016) were used.

18 This concerned the two factors related to teaching strategies presented in Table 8.15 (in Scheerens, 2016).

19 Since the book's publication in 2009, the *Visible Learning* website has provided two updates (2011 and 2015) to the original factors and effect sizes. These additions have not yet led to an updated version of the book itself. This means that the 57 factors that have been added to the 2009 ranking do not include explanations beyond simply their titles. Such explanations are highly useful in terms of interpreting the factors underlying the comparative analysis. Because of the explanations that accompanied the factors in the 2009 synthesis, that iteration of the study was used for the comparative analysis.

> All of a sudden, despite years of school effectiveness and school improvement literature and calls for instructional leadership (including supporting empirical research), there was finally research that spoke to administrator rhetoric. . . . Hattie provided school administrators with evidence on which they could base decisions— evidence informed decisions.

Hattie presented research outcomes that were relatively specific, practically recognizable, formulated as part of an engaging narrative, and visually supported. These features have resulted in this work often playing a role at practitioner gatherings around the globe, including up until the present day (Eacott, 2017; Snook, Clark, Harker, O'Neill, & O'Neill, 2009).

3.2.3 Approach of the comparative analysis

To analyze how current school interventions in Dutch secondary education relate to the factors presented in Robinson et al. (2009), Scheerens (2016), and Hattie (2009), the researcher compared each school intervention from the dataset to each individual factor presented in each synthesis study according to the available definitions or descriptions. Each analogy between a school intervention and an effectiveness factor was categorized into one of four analogy types. These types were primarily based on the abstraction level of the effectiveness factor in question. The related approach is subsequently described in greater detail. Additionally, an in-depth analysis of the three school interventions with the highest frequencies was conducted. Finally, this chapter presents the mean effect sizes and ranks of all school interventions with an analogous effectiveness factor. The outcomes of the comparative analysis are presented using the 16 school intervention subdomains of the classification from Chapter 2.

During the comparison process, some degree of interpretation was inevitable, as certain items—including both school interventions and effectiveness factors—could be interpreted in multiple ways. School interventions and effectiveness factors do not necessarily have the same origins and purposes. The EER domain tends to focus on student achievement as measured via cognitive outcomes in core subjects such as language and mathematics. A school intervention does not automatically stem from the desire to affect student achievement. School leaders might well be pursuing other goals when selecting a particular school intervention. Or, boosting student achievement might indeed be the main aim, but school leaders might utilize different outcome measures, such as non-cognitive outcomes, to reach that goal. However, considering EER's foundational questions and policy-makers' assumption that increased school autonomy leads to improved student achievement, one would expect considerable congruence between actual school interventions and those factors with higher effect

sizes. A comparative analysis was expected to provide deeper insight into the extent to which this assumption holds true for the interventions currently initiated by Dutch secondary school leaders.

Different effectiveness factors showed different aggregation levels, both within and across the three syntheses. Some factors were described in a fairly specific and clear manner, and these included bilingual programs, career interventions, and ability grouping initiatives. Other factors featured a more general or comprehensive character (e.g., school climate, curriculum quality, and educational leadership). These different levels of abstraction and their accompanying effect sizes influenced both the amount of space for interpretation and the applicability of the factors. To manage these differences, the researcher differentiated four analogy types. Three of the four types were based on the specificity of the effectiveness factor and the presence of an effect size. A fourth variant was added to indicate the lack of an analogous effectiveness factor. The four analogy types are the following:

A. The school intervention was similar to a relatively specific effectiveness factor. The corresponding effect size was hence relatively distinct.
B. The school intervention was similar to a relatively general effectiveness factor. The corresponding effect size was hence relatively aggregated.
C. The school intervention was similar to a relatively general effectiveness factor without an effect size.
D. The school intervention was not similar to any effectiveness factor.

There was, of course, a fifth analogy option, one describing those effectiveness factors that did not demonstrate any parallels with a school intervention in the dataset. These factors, however, were not included in the comparative analysis. The four analogy types included in this study are visualized in Figure 3.1.

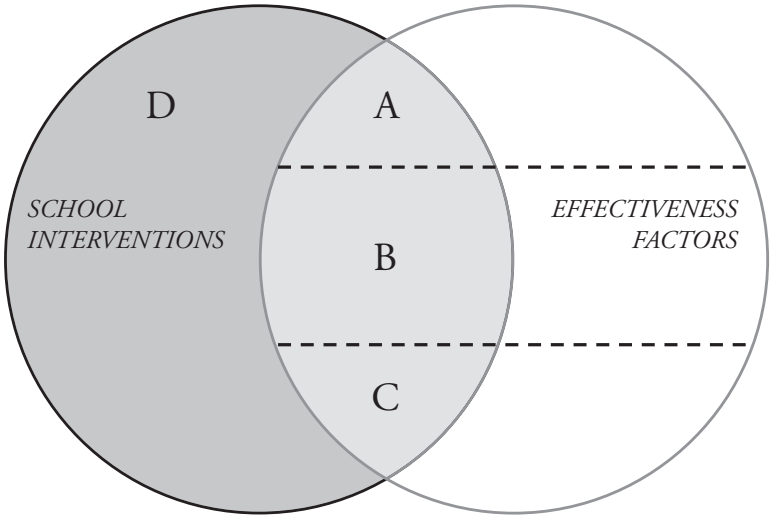


Figure 3.1: Visualization of the four analogy types included in the comparative analysis. The fifth option covers the right-hand side of the figure. The proportions of the various segments are not representative of the actual distribution.

The distinctive characters of analogy types C and D are obvious: Type C factors did not have an effect size, and type D interventions did not demonstrate any parallels with any of the studied factors. The difference between types A and B is less straightforward. What distinguishes the two is whether the effectiveness factor in question is specific or general. All categorization decisions were carefully considered and cross-checked. Box 3.1 offers four examples.

The school intervention bilingual education exhibited an analogy with Robinson et al.'s "planning, coordinating and evaluating teaching and the curriculum" factor. Because this factor was very broadly and comprehensively formulated, it was considered a general factor. Therefore, the analogy was characterized as type B. When compared to Scheerens' factors, the intervention demonstrated a parallel with the "curriculum/opportunity to learn" factor, and more specifically, with that factor's "satisfaction with the curriculum" component. Since "curriculum/opportunity to learn" is comprised of more than four components, this analogy was also characterized as type B. Finally, the intervention was similar to Hattie's specific factor "bilingual programs." Therefore, that analogy was characterized as type A.

As with bilingual education, entrepreneurial education is a curricular intervention. For this reason, analogies were found with the same general curricular factors cited by Robinson et al. and Scheerens. These analogies were once again type B ones. Hattie's set of curricular factors did not include one regarding entrepreneurial education, a fact that resulted in a type D analogy.

The relatively generally defined school intervention change in school culture demonstrated a type B analogy with Robinson et al.'s similarly general factor "ensuring an orderly and supportive climate." When compared to Scheerens' variables, the intervention was found to exhibit a type B analogy with the general factor "school climate." It should be noted that the analogy is based on a similarity with only one subcomponent of the "school climate" factor: "shared goals by staff and students." This single subcomponent thematically differs from most of the factor's other subcomponents; these refer to rules, regulations, punishment, reward, conduct, job appraisal, pupil engagement, and relationships between teachers and students. The intervention was also similar to Hattie's "principals/school leaders" factor. Compared to most of Hattie's factors, this variable features a relatively high level of abstraction. A single factor and effect size brought together various leadership forms and competencies. Therefore, the analogy was characterized as type B. Unlike Hattie's apparently similar "principals/school leaders" factor, Scheerens' "educational leadership" mainly entails elements of instructional and administrative leadership. For this reason, "school climate" was believed to yield a more fitting analogy with this particular school intervention than "educational leadership."

The school intervention cooperation with the local business community demonstrated parallels with Robinson et al.'s factor "creating educationally powerful connections." Because this variable lacked an effect size, the analogy was categorized as type C. Neither Scheerens nor Hattie presented a factor analogous to this specific intervention. Consequently, both non-existent analogies were classified as type D.

Box 3.1: Four examples of the comparative approach.

Table 3.1 illustrates the distribution of factors per synthesis across analogy types A, B, and C.

	Analogy type A	%	Analogy type B	%	Analogy type C	%
Robinson et al. (2009)	-	-	All five factors with an effect size	62.5	All three factors without an effect size	37.5
Scheerens (2016)	All four factors consisting of four components or less, as presented in Tables 5.6 and 8.14 in Scheerens (2016)	33.3	All eight factors consisting of more than four components, as presented in Tables 5.6 and 8.14 in Scheerens (2016)	66.7	-	-
Hattie (2009)	All factors[20] except the five factors mentioned with respect to type B analogies[21]	83.9[22]	• Finances[23] • Principals/school leaders[24] • Professional development[25] • Comprehensive teaching reforms[26] • Curricula average[27]	16.1	-	-

Table 3.1: Distribution of the effectiveness factors across the A, B, and C analogy types per synthesis.

Including a typology enabled the researcher to indicate not only whether a school intervention was analogous to an effectiveness factor but also how abstract the analogy in question was. The nature of an analogy is believed to have implications in terms of interpretation: The more specific an analogy is, the greater is the potential utility for users.

20 "All factors" concerns only those 31 items (30 factors and 1 aggregated category) that showed similarities with school interventions from this study's dataset. The 107 factors that did not appear in this study's comparative analysis are not included in Table 3.1.

21 Unlike Scheerens' approach, Hattie's representation of effectiveness factors unfortunately did not allow for a straightforward quantified distinction between specific and broad factors. The type B analogy factors were considered to feature a higher level of abstraction than the vast majority of the more specific factors involved in type A analogies. The criteria used to define a factor as a general one—and hence, the criteria for type B analogies—are presented in the corresponding footnotes.

22 This calculation was based on the 31 items that the comparative analysis found to be analogous to a school intervention (see previous footnote). Of these, 26 were categorized as specific (type A) and 5 as general (type B). It was not possible to calculate the distribution of factors underlying the type A and B analogies

23 "Finances" was considered a general factor because it comprises all interventions related to school expenditures, the use of resources, and financial aid for students.

24 "Principals/school leaders" is composed of all leadership forms and competencies listed in 11 different meta-analyses; these were distilled into a single factor and effect size. Robinson et al. (2008), the article that preceded the complete Robinson et al. (2009) study, was just one of the meta-analyses underlying this single factor (and the corresponding effect size). Hence, if this factor were considered a specific one, then all of Robinson et al.'s highly aggregated factors would need to be considered as candidates for type A analogies

25 "Professional development" is another factor encompassing diverse and abstract elements. Diverse sub-factors, such as types of instruction, the involvement of external experts, teacher engagement in the learning process, opportunities to learn, and in-service programs and professional development in general, are brought together within this single factor.

26 The factor "comprehensive teaching reforms," subtitled "implementations that emphasize school-wide teaching reform" (Hattie, 2009, p. 215), speaks for itself regarding its abstraction level.

27 Hattie presented an aggregated effect size for all 25 factors that together comprise "the contributions from the curricula." Although this aggregated item was not one of the 138 factors, it demonstrates useful similarities with certain school interventions. Because this item was constructed from 25 individual factors, it was interpreted as a general factor.

This section concludes by emphasizing that an inclusive stance was taken when deciding whether an analogy existed between any two items. This implies that the outcomes of the comparative analysis are more likely to be an overestimation than an underestimation of both the presence of similarities between any two items and the level of abstraction.

3.3 Findings

In this section, the analogies are presented first, using one of the 16 subdomains as an example (3.3.1). Then, the distribution of analogy types is described per synthesis (3.3.2) and per school intervention subdomain (3.3.3). The section concludes with an analysis of the pursued school interventions from an EER perspective (3.3.4).

3.3.1 Encountered analogies

Following the comparative approach outlined in the methodological approach section (3.2.3), the researcher compared each school intervention to all individual effectiveness factors from each of the three syntheses. The complete comparative analysis is presented in Appendix B. Table 3.2 illustrates the analogies found for the 89 school interventions in the learning environments subdomain, which serves as an example of the comparisons made in all 16 subdomains. The outcomes are categorized per analogy type (A–D). For each analogy, the effectiveness factor's effect size and rank are presented when available, as is the corresponding percentage of school interventions. All noteworthy findings that followed from the comparative analysis are described in the corresponding "remarks" boxes within Table 3.2. For the sake of clarity, only the names of the effectiveness factors are presented. Additional information about these factors, such as descriptions or lists of their (sub)components, can be found in the corresponding synthesis.

LEARNING ENVIRONMENTS (N=89)
This subdomain consists of interventions concerning the learning environment and the methods and tools, including digitalization, used for teaching, learning, and assessment.[28]

School intervention	Factor from Robinson et al. (2009)	E[29]	R[30]	%[31]	School intervention	Factor from Scheerens (2016)	E[32]	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
										iPad class, bring your own device (BYOD), classroom laptops, laptop/ tablet-oriented education, electronic learning environment, information technology applications	Computer assisted instruction	0.37	71	75.3
										New approaches to assessment, evaluation of the assessment program	Frequent / effects of testing	0.34	79	20.2
Type B: School intervention analogous to a relatively general effectiveness factor														
New approaches to assessment, evaluation of the assessment program, new teaching methods	Planning, coordinating, and evaluating teaching and the curriculum	0.42	2	24.7	New approaches to assessment, evaluation of the assessment program	Evaluative potential	−0.047	9	20.2					

28 All school interventions presented in this table derived directly from the school leader questionnaire, which was translated from Dutch. The listed interventions are by no means exhaustive and should be viewed as examples. The analogies are sorted by frequency per synthesis. When two frequencies were equal, the analogies were sorted by effect size (high to low).

29 E = effect size. An effect size is a standardized measure of the strength of the relationship between two variables. The variables in the three syntheses were mostly school or school leadership practices or interventions, and student achievement. Both Hattie and Robinson et al. "use[d] the following lower boundaries as a guide when interpreting effect sizes: .2, small; .4, medium; .6, large. Based on his research, Hattie [found] the average student gain to be .35 for a year of teaching in reading, mathematics, and writing" (Robinson et al., 2009, p. 38). Scheerens presented Cohen's standards for interpreting effect sizes: "according to Cohen (1982), small effects are in the order of r = 0.10, medium effects r = 0.30 and large effects r = 0.50 or higher." He added that "it should be noted, however, that several authors argue that Cohen's standards are to be considered as too conservative, and do not match the practical significance of malleable school variables. . . . [Baumert, Lüdtke, and Trautwein (2006)] discuss a method to compute effect sizes . . . which, when applied to a practical example, suggests that effect sizes of about r = 0.15–0.20 (small to medium according to Cohen's standards) would equal the learning gain in one school year, which they consider as an effect of great practical relevance" (Scheerens, 2016, p. 191).

30 R = rank of the factor in the synthesis. For Robinson et al., the range was 1–5, while for Scheerens and Hattie, it was 1–12 and 1–138, respectively.

31 % = percentage of school interventions per analogy. When summed, the subdomain percentages total 100%.

32 These effect sizes are the mean effects moderated for "secondary" and "the Netherlands."

School intervention	Factor from Robinson et al. (2009)	E[29]	R[30]	%[31]	School intervention	Factor from Scheerens (2016)	E[32]	R	%	School intervention	Factor from Hattie (2009)	E	R	%
					New teaching methods	Curriculum quality / opportunity to learn	−0.12	11	4.5					
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
iPad class, BYOD, classroom laptops, laptop/tablet-oriented education, electronic learning environment, information technology applications	Selecting, developing, and using smart tools	-	-	75.3										
Type D: School intervention not analogous to an effectiveness factor														
					iPad class, BYOD, classroom laptops, laptop/tablet-oriented education, electronic learning environment, information technology applications*				75.3	New teaching methods				4.5
Remarks														
					* A broad interpretation of the "evaluative potential" and "curriculum quality/opportunity" factors suggests that they could apply to all interventions in this subdomain, including those referring to digital applications for teaching, learning, and assessment. However, it is remarkable that neither factor's extensive set of subcomponents contains a reference to digital applications. This is especially the case because the vast majority of school interventions in this subdomain concern digital applications or methods for teaching, learning, and assessment. For this reason, all interventions referring to digital tools or methods for teaching, learning, and assessment are categorized as type D.									

Table 3.2: The comparative analysis for school interventions in the learning environments subdomain.

3.3.2 Distribution of analogy types per synthesis

The distribution of the four analogy types per synthesis is visualized in Figure 3.2. These illustrations are based on the complete itemized comparative analysis of the 595 school interventions, as presented in Appendix B.

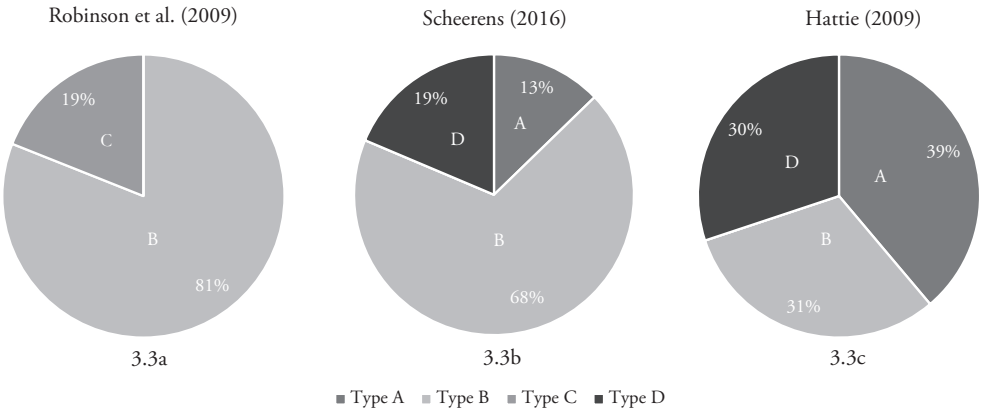


Figure 3.2: Distribution of analogy types following the complete comparative analysis between school interventions and effectiveness factors per synthesis.

Figure 3.2 reveals large differences in the distribution of analogy types across the three syntheses. These differences reflect the characters of the syntheses. Table 3.1 has already demonstrated that not all syntheses produced all four analogy types. Robinson et al. presented eight general factors that were so comprehensive that all interventions exhibited similarities with at least one of them. This comprehensive character suggests a lack of type D analogies, but Figure 3.2a clarifies that type A analogies were also absent. Three of these eight general factors lacked an effect size, resulting in type C analogies. Since all of Scheerens' and Hattie's factors did have an effect size, Figures 3.2b and 3.2c do not point to any type C analogies. The presence of type D analogies between the school interventions and the factors outlined by Scheerens and Hattie illustrates that in addition to interventions featuring in specific (type A) and general (type B) analogies, several school interventions lacked an analogous effectiveness factor.

In addition to highlighting the differences in the analogy types, Figure 3.2 also makes clear that the distribution of analogy types varied widely across the syntheses. Although type B analogies were, on average, the most common, the corresponding percentages differed greatly per synthesis. This could be a logical consequence of the different proportions of specific and general effectiveness factors underlying the analogy types presented in Table 3.1. Table 3.3, however, illustrates that in all but one case, these proportions do not equal the actual distribution of analogy types.

	Type A		Type B		Type C		Type D	
	Proportion in synthesis[33]	Proportion in analysis	Proportion in synthesis	Proportion in analysis	Proportion in synthesis	Proportion in analysis	Proportion in synthesis	Proportion in analysis
Robinson et al. (2009)	-	-	62.5%	81%	37.5%	19%	-	-
Scheerens (2016)	33%	13%	67%	68%	-	-	-	19%
Hattie (2009)	84%	39%	16%	31%	-	-	-	30%

Table 3.3: The proportion of type A, B, and C factors in each synthesis compared to the proportion of analogy types following the comparative analysis per synthesis.

Compared to the proportion of general factors with an effect size presented in Robinson et al., type B analogies are overrepresented and type C analogies are underrepresented according to the comparative analysis. This means that a relatively large number of school interventions were similar to one of Robinson et al.'s factors with an associated effect size. The proportion of general factors in Scheerens almost equals the proportion of type B analogies. It should be noted, however, that the school interventions oftentimes demonstrated a parallel with just one of the numerous components or subcomponents comprising these more general factors. The factor "school climate," for example, consists of 16 components. Each of these 16 components in turn encompasses various subcomponents. The effect sizes of these general factors are hence aggregates of the many underlying components and subcomponents. The underrepresentation of type A analogies is compensated for by the proportion of school interventions that lacked an analogy (type D). Compared to the other two syntheses, Hattie's work yielded a relatively large share of type A analogies. This proportion was, however, much smaller than one would expect given the large percentage of specific factors that appeared in the comparative analysis. This discrepancy is partly explained by the relatively large share of interventions that lacked an analogy as compared to the other two syntheses. This finding is less surprising, however, considering that Hattie's prime focus was on teaching and learning factors, whereas half of all school interventions were related to the organizational and staff-centered subdomains.

3.3.3 Distribution of analogy types per school intervention subdomain

Table 3.4 organizes the results of the comparative analysis of the 16 school intervention subdomains. A number of observations are particularly notable.

33 For Hattie, this table once again only concerns those 31 items (30 factors and 1 aggregated category) analogous to school interventions found in the dataset.

School intervention subdomain	N	Robinson et al. (2009)				Scheerens (2016)				Hattie (2009)			
		A	B	C	D	A	B	C	D	A	B	C	D
EDUCATION													
Pedagogical approaches	78	-	100	-	-	48.7	46.2	-	5.1	67.9	32.1	-	-
Educational programs	101	-	94.1	5.9	-	-	100	-	-	51.5	27.7	-	20.8
Systemic pathways	28	-	100	-	-	-	100	-	-	25	-	-	75
Learning environments	89	-	24.7	75.3	-	-	24.7	-	75.3	95.5	-	-	4.5
ORGANIZATION													
School culture	21	-	100	-	-	-	71.4	-	28.6	19	81	-	-
Organizational structures	38	-	65.8	34.2	-	-	65.8	-	34.2	-	100	-	-
Organization of education	21	-	100	-	-	-	100	-	-	19	81	-	-
Quality assurance	43	-	79.1	20.9	-	-	100	-	-	37.2	-	-	62.8
Student care and support	38	-	100	-	-	92.1	7.9	-	-	18.4	-	-	81.6
Stakeholder relationships	16	-	-	100	-	18.6	-	-	81.4	18.6	-	-	81.4
Financial resources	4	-	100	-	-	-	-	-	100	-	100	-	-
Facilities and accommodation	4	-	50	50	-	-	100	-	-	-	-	-	100
STAFF													
Professional autonomy and culture	73	-	100	-	-	-	100	-	-	-	100	-	-
Teaching and school-related assignments	19	-	100	-	-	-	100	-	-	-	-	-	100
Staffing policy	18	-	100	-	-	-	100	-	-	-	-	-	100
Recruitment and employment	4	-	100	-	-	-	-	-	100	-	-	-	100

Table 3.4: Distribution of school interventions per school intervention subdomain, synthesis, and analogy type (A–D) as a percentage of the total number of interventions per subdomain (N).

Table 3.4 points to a large variety of analogy types across both the different subdomains and the three syntheses. For example, the BYOD intervention from the learning environments subdomain was involved in a type C analogy with Robinson et al.'s "selecting, developing, and using smart tools," a general factor without an effect size. This intervention was not similar to any of Scheerens' factors, and it was in a type A relationship with Hattie's specific factor "computer-assisted instruction." Compared to the staff-related and organizational subdomains, the educational subdomains contain a relatively high share of type A analogies with specific effectiveness factors. That this holds especially true with regard to Hattie's factors is not surprising in light of his focus on teaching and learning.

The remaining educational analogies were largely categorized as type B. The main exception concerned the systematic pathways subdomain. Most school interventions in this subdomain were directly related to the highly stratified Dutch secondary education system, which is characterized by extensive early tracking (OECD, 2016a). This fact may explain the lack of analogous factors in the syntheses, which mainly consisted of studies executed in English-speaking educational systems that are, on average, less stratified (Korthals, 2015). It is likewise notable that 75% of all learning environment interventions did not demonstrate parallels with any of Scheerens' factors. However, this same percentage of interventions was analogous to one of Robinson et al.'s general factors without an effect size. Appendix B shows that this these interventions were related to digital tools or methods for teaching and learning.

The organizational subdomains suggest substantial variation in analogy types across the syntheses. The organizational structures, quality assurance, stakeholder relationships, and facilities and accommodation' subdomains featured, on average, a relatively high percentage of interventions lacking an analogous factor (D) or similar to a factor without an effect size (C). Compared to the educational and staff-related subdomains, the organizational categories contain a relatively high number of interventions related to one of Robinson et al.'s factors without an effect size (type C). In short, the vast majority of the more specific organizational interventions were analogous to general factors (B and C) or to no factors at all (D). For a more in-depth discussion of the nuances of the different subdomains and syntheses, refer to the itemized comparison in Appendix B.

Furthermore, Table 3.4 makes clear the absence of specific analogies in the staff-related subdomains. Specific interventions concerning recruitment and employment were remarkably absent in the syntheses. The staff-related subdomains revealed that the highest proportion of interventions consisted of those not analogous to any of Hattie's factors. The interventions in the largest such subdomain, professional autonomy and culture, were involved in type B relationships with the following general factors: "promoting and participating in teacher learning and development" (Robinson et al.), "educational leadership" (Scheerens), and "professional development" (Hattie). Compared to the frequently rather specific school interventions in this subdomain, the general effectiveness factors were highly aggregated.

Finally, Table 3.4 demonstrates that although certain school intervention subdomains were associated with a greater share of specific (type A) analogies than were others, no synthesis contained specific factors matching every item in a school intervention subdomain. In every case, more general analogy types represented a share of the analogies within a subdomain.

3.3.4 Dutch school interventions from an educational effectiveness perspective

The previous findings have provided insight into the extent to which current Dutch school interventions parallel the factors presented in three EER syntheses. The comparative analysis revealed that numerous current school interventions lack an analogous effectiveness factor. Considering that 107 of Hattie's factors did not exhibit parallels with any of the school interventions, a simple shortage of factors cannot explain this finding. The comparative analysis also identified a variety of school interventions that did demonstrate similarities with the effectiveness factors. For these interventions, their expected effectiveness according to the syntheses was analyzed. To that end, the average effect sizes and the synthesis-level ranks per analogy are first considered. Second, an in-depth analysis of the three school interventions with the highest frequencies is presented.

The mean effect sizes and ranks of all school interventions that were analogous to effectiveness factors with an effect size (types A and B) are presented per synthesis in Table 3.5. In line with the reservations expressed in the methodological approach section (3.2.3), only modest conclusions should be drawn from these figures.

	Type A					Type B				
Synthesis	**Mean effect size**	**SD**	**Mean rank**	**SD**	**% of analogies**	**Mean effect size**	**SD**	**Mean rank**	**SD**	**% of analogies**
Robinson et al. (2009)	-	-	-	-	-	0.44	0.15	2.4	1.0	81
Scheerens (2016)	–0.08	0.09	9.6	1.7	13	–0.03	0.09	8.3	2.8	68
Hattie (2009)	0.34	0.13	78.0	24.8	39	0.43	0.14	60.0	32.5	31

Table 3.5: Mean effects and ranks of all school interventions involved in type A or B analogies per synthesis.

Those school interventions that paralleled one of Robinson et al.'s five general factors had a mean effect size of 0.44 and a mean rank of 2.4 out of 5. The mean effect sizes (moderated for "the Netherlands" and "secondary") of the school interventions analogous to one of Scheerens' four specific factors or eight general factors were both negative: –0.08 (specific) and –0.03 (general). The corresponding ranks (specific: 9.6; general: 8.3) were both relatively low on the 1–12 scale. Those school interventions similar to one of Hattie's specific factors had a mean effect size of 0.34 and a mean rank of 78 out of 138. The interventions that corresponded to the more general factors tended to have higher scores, with a mean effect size of 0.43 and a mean rank of 60. Based on the mean effect sizes and ranks in Table 3.5, when compared to the three used syntheses, the reported Dutch school interventions tended to parallel effectiveness factors with relatively low effect sizes—in one instance, the effect size was even negative. This finding

held true for the relatively specific analogies (type A), as well as for the more general analogies (type B), albeit to a lesser extent.

The three school interventions with the highest frequencies in the dataset were the following: digital tools and methods for teaching and learning (11.6%); peer professionalization (6.7%); and interventions concerning differentiation, individualization, and personalization (6.1%).[34] For each of these three school interventions, Table 3.6 demonstrates the analogy type and, if available, the analogous factor, effect size, and rank from each synthesis.

Synthesis	Analogy type	Factor	Effect size	Rank
Digital tools and methods for teaching and learning				
Robinson et al. (2009)	C	Selecting, developing, and using smart tools	-	-
Scheerens (2016)	D	-	-	-
Hattie (2009)	A	Computer assisted instruction	0.37	71/138
Peer professionalization				
Robinson et al. (2009)	B	Planning, coordinating, and evaluating teaching and the curriculum	0.42	2/5
Scheerens (2016)	B	Consensus and cohesion among staff	0.038	5/12
Hattie (2009)	B	Professional development	0.62	19/138
Differentiation, individualization, and personalization				
Robinson et al. (2009)	B	Planning, coordinating, and evaluating teaching and the curriculum	0.42	2/5
Scheerens (2016)	A	Differentiation	–0.10	10/12
Hattie (2009)	A	Aptitude/treatment interactions	0.19	108/138

Table 3.6: Comparative analysis of the three most frequent school interventions, including the analogy type, factor, effect size, and rank per synthesis.

First, Table 3.6 reveals that for all school interventions concerning digital tools and methods for teaching and learning, only Hattie's "computer-assisted instruction" factor provided a specific analogy. This factor, however, only ranked 71 of 138. Robinson et al.'s "selecting, developing, and using smart tools," a factor without an effect size, featured in a general analogy. Scheerens did not present any factor that included digital tools or methods as a component or subcomponent. Taken as a whole, the three syntheses provide little evidence that interventions concerning digital tools and methods for teaching and learning substantially enhance student achievement.[35]

34 All three school interventions are collective constructs encompassing all school interventions linked to similar concepts.

35 Concerning digital interventions in particular, current technological interventions are likely to differ from many of those measured in the studies underlying the syntheses. However, the EER syntheses used in the comparative analysis remain authoritative at a global level to date.

Second, peer professionalization interventions tended to parallel general factors in all three syntheses. Most of the peer professionalization interventions were more specific than any of the analogous factors, which impeded a straightforward interpretation of the effect sizes of the related factors. However, these general analogies did indicate that interventions directed at teacher professionalization were relatively effective as compared to those involving other effectiveness factors. Robinson et al.'s corresponding factor ranked 2 out of 5, while Scheerens' factor ranked 5 out of 12,[36] and Hattie's 19 out of 138. Consequently, the syntheses provide general evidence that interventions in this area are likely to enhance student achievement in a relatively profound way.

Third, Table 3.6 shows that both Scheerens and Hattie mentioned factors that allowed for specific analogies that could be interpreted in different ways. The corresponding effect sizes and ranks, however, were again fairly low. Hattie found only a small effect, whereas Scheerens' moderated effect size was even negative.[37] Interventions concerning differentiation, individualization, and personalization were analogous to Robinson et al.'s general factor "planning, coordinating, and evaluating teaching and the curriculum." Because this factor had a relatively high rank, it provided evidence of the positive influence of such general interventions in terms of student achievement. Once again, however, this general factor's highly aggregated effect size was not particularly informative regarding the expected effectiveness of the more specific differentiation interventions in question.

All in all, the more detailed analysis underscored that the syntheses offer little EER-based evidence that the three most frequently implemented school interventions in Dutch secondary education notably improve student achievement. This outcome was due to absent analogies, analogies with a general character, and specific analogies associated with approaches with low or negative effectiveness.

36 This factor's mean effect size (not moderated for "secondary" and "the Netherlands") was 0.019, and it ranked 11 out of 12. If one were to use the mean effect sizes rather than the moderated effect sizes, this factor would possess the second lowest effect size. Most of the support for peer professionalization interventions from an EER perspective would then disappear.

37 This factor's mean effect size (not moderated for "secondary" and "the Netherlands") was 0.017 and ranked 12 out of 12. If one were to use the mean effect sizes rather than the moderated effect sizes, this factor would still be in last place. These results do not indicate support for differentiation interventions from an EER perspective.

3.4 Conclusion

The aim of this study was to analyze how current school interventions relate to the effectiveness factors presented in three internationally authoritative EER syntheses. Dutch secondary education, which is characterized by a high level of school autonomy, served as the research setting. The objective was realized by means of a comparative analysis contrasting actual school interventions, which were identified via a questionnaire distributed among school leaders, and the effectiveness factors listed in three internationally authoritative syntheses. The analysis accounted for the different aggregation levels of the effectiveness factors and included their effect sizes and ranks when available. In the process of identifying analogies between any two items, the researcher adopted an inclusive stance. This approach suggests that the outcomes of the comparative analysis are more likely to overestimate than to underestimate both the presence of an analogy between any two items and the level of abstraction. The complete comparative analysis provided a rich set of findings, and this section presents the five most important results.

First, the vast majority of analogies between school interventions and effectiveness factors were general in nature. In most cases, this meant that fairly specific school interventions (e.g., technical profile school) were analogous to fairly general factors (e.g., "curriculum/opportunity to learn"). This scenario describes all analogies identified with Robinson et al.'s factors, 68% of the analogies involving Scheerens' factors, and 31% of the analogies involving Hattie's factors. This distribution did not necessarily equal the distribution of general versus specific factors per synthesis. Two types of analogies were based on general effectiveness factors: those involving effectiveness factors with an effect size and those involving effectiveness factors without an effect size. Only Robinson et al. presented factors without an effect size (19%).

Second, although this outcome occurred far less frequently than general analogies, a few school interventions paralleled relatively specific factors from Scheerens (19%) and Hattie (30%). However, these specific analogies occurred far less often than the general analogies, as was expected based on the availability of specific factors in Hattie and, to a somewhat lesser extent, in Scheerens. Robinson et al. did not mention any specific factors. These fairly specific analogies were mostly present in the educational subdomains, although they were also found in the organizational subdomains. They were absent in all staff-related subdomains. The significant thematic variety of the specific factors cited by Scheerens and Hattie made it challenging to summarize the related school intervention areas.

Third, a diverse range of school interventions lacked an analogous effectiveness factor altogether. These observations were only slightly less frequent than the aforementioned specific analogies and mainly concerned interventions in the organizational and staff-related domains. Although Robinson et al.'s general and comprehensive factors covered all school interventions, 20% of the school interventions lacked a parallel among Scheerens' factors. Moreover, 30% did not have a counterpart among Hattie's factors, despite Hattie's 107 factors that lacked an analogous school intervention. On average, the educational domain featured fuller coverage, but again, certain educational interventions did not demonstrate parallels with any of the available factors. The wide differences among the syntheses again hindered a clear overview of the interventions concerned.

Fourth, the calculations of the mean effect sizes and the ranks of those interventions analogous to factors with effect sizes indicated that across all syntheses, current Dutch school interventions tend to be similar to effectiveness factors with relatively low—or even negative—effect sizes. This finding held true for the relatively specific analogies and, to a somewhat lesser extent, the more general analogies.

Fifth, the more detailed analysis of the three most frequent interventions suggested that the three syntheses used for this study's comparative analysis provide little EER-related evidence of these particular interventions notably improving student achievement. This finding is based on three observations. First, the relatively specific effectiveness factors that were analogous to these interventions all had small or negative effect sizes and low rankings as compared to many other effectiveness factors. Second, those factors that were associated with positive evidence all had a relatively general character. These factors encompassed numerous components, which means that the effect sizes were highly aggregated. This situation impeded straightforwardly translating those effect sizes to the oftentimes fairly specific school interventions. Third, the school intervention with the highest frequency lacked an analogous factor in one synthesis and was linked to a factor without an effect size in another. Hence, two of the three used syntheses did not provide any evidence regarding the most common school intervention in Dutch secondary education.

3.5 Discussion

Decision-making responsibilities at the school level have grown substantially in most education systems over the last few decades, including in the Netherlands. Dutch school leaders, as final arbiters in decision-making processes at the school level, are autonomous with respect to many functional domains. The large international EER knowledge base suggests that schools and school leaders can make a difference in terms of enhancing student achievement, but that certain interventions are more effective than others. The extent to which school practice matches EER principles remains a topic about which little is known. Considering EER's foundational questions and policy-makers' assumption that increased school autonomy leads to improved student achievement, one could expect considerable congruence between actual school interventions and those factors studied by EER researchers and known to result in high(er) effect sizes. Such an outcome would be an indication of school leaders using EER evidence as a guide in their exercise of school autonomy by introducing those interventions with a relatively significant effect on student achievement.

This study's comparative analysis demonstrates that a wide range of current Dutch secondary school interventions lack an analogous factor in at least one of the examined syntheses, despite the relatively inclusive stance adopted in identifying those analogies. This outcome implies that these EER meta-analyses offered little to no support for a substantial share of actual school leader practices. Still, these are the interventions that shape current Dutch secondary school practice. From among the myriad of potential school interventions that could be introduced in the highly decentralized Dutch secondary education, school leaders initiate many interventions that possess relatively low effect sizes or that are not (specifically) studied in the three used syntheses. At the same time—from the perspective of Dutch school leaders—these studies seem to have put effort into determining or refining the effectiveness of interventions that are hardly present in Dutch secondary education.

The general analogies and, where applicable, the corresponding aggregated effect sizes may serve as a broad indication for school leaders, researchers, policy makers, and training institutes of the thematic exercise of school autonomy and the expected overall effectiveness of current school interventions. These analogies are, however, less informative for school leaders seeking EER-based evidence to use in their decision-making processes regarding specific school interventions or for researchers and policy-makers aiming to study the effectiveness of the current exercise of school autonomy. This study's findings offer suggestions for future EER meta-research. They also serve as a foundation for further analyses of school leader decision-making. If current school

interventions apparently enjoy limited support in terms of EER meta-evidence, that situation prompts the question of why school leaders implement them. This question is further explored in the next chapter.

Some of the school interventions identified as paralleling general effectiveness factors or no effectiveness factors within the studied syntheses might be covered by either meta-studies from other disciplines or newer EER meta-analyses. More specific analogies might be pinpointed by comparing school interventions to more recent studies with a specific research focus, such as studies on specific pedagogical approaches or teacher training programs. At the same time, when seeking evidence, school leaders are more likely to rely on syntheses such as those used in this study than on individual studies. This presumption is due to both the notable advantages of syntheses, as mentioned in the methodological approach section (3.2.2), and the more practical difficulties that practitioners encounter when consulting individual studies, such as limited access and complex language usage (Fusarelli, 2008; Levin, 2011; Vanderlinde & van Braak, 2009). Based on the comparative analysis centered on a dataset of nearly 600 current Dutch secondary school interventions and the effectiveness factors presented in three internationally authoritative effectiveness syntheses, the researcher believes that the outcomes provide valuable insight into the relationship between current school interventions—representing the actual exercise of school autonomy—and effectiveness factors. Additional analyses drawing on datasets from other educational systems or sectors, or on other effectiveness syntheses, will only add to our collective understanding of this multi-faceted relationship.

4

Chapter 4

School leaders' personal beliefs and the motives behind their school intervention decisions

4.1 Introduction

What makes school leaders pursue specific school interventions? Chapter 3 has shown that Dutch secondary school leaders hardly ever pursue those interventions that one would expect based on the findings of three comprehensive school effectiveness review studies (Hattie, 2009; Robinson et al., 2009; Scheerens, 2016). In this respect, Ehren, Perryman, and Shackleton (2015, p. 320) have reported that "inspection standards and the risk-based inspection methods in The Netherlands . . . frame the discussion about school improvement around student achievement in mathematics, reading, and writing." The outcomes of the comparative analysis, however, suggest that the vast majority of school interventions are not primarily motivated by the ambition to improve cognitive student achievement. This observation is supported by the questionnaire data on school leaders' reasons for pursuing their reported interventions. Less than 1% of all mentioned 825 reasons were directly related to research evidence, and only 7.2% of the reasons were directly linked to improving educational outcomes. These latter reasons often resembled the terminology of the Dutch Inspectorate of Education's outcome indicators.[38] Many other formulated statements demonstrated the following line of reasoning: An intervention in subdomain X is motivated by a desire to improve X. For example, "an intervention in the educational program is motivated by the desire to improve the educational program." Such answers, however, do not provide the information necessary to better understand why school leaders choose to pursue specific school interventions. To answer the second research question—what motives underlie school leaders' school intervention decisions?—the researcher further explored school leaders' motives by means of in-depth interviews. If school leaders are apparently only slightly motivated by research evidence or the explicit ambition to increase cognitive student achievement, and if the reported interventions were not directly related to any of the measured school and school leader characteristics,[39] the question remains of why school leaders pursue specific school interventions.

The literature shows that school leader behaviors and actions are influenced by a numerous, often interlinked factors at the personal, organizational, and societal levels.[40]

38 Examples include improvements related to student transfer between course years and levels, exam results, and grade differences between school exam results and national (standardized) exam results.

39 In an attempt to identify possible patterns in school leaders' intervention decisions, the researcher conducted various regression analyses with characteristics of the school and school leader as independent variables and intervention (sub)domains as dependent variables. As elaborated in Section 2.5.3, none of the regression analyses led to meaningful, significant outcomes.

40 The literature review comprised studies from various (educational) disciplines, such as school leader decision-making (e.g. Cranston, Ehrich, & Kimber, 2003; Dempster & Berry, 2003; Patterson, Purkey, & Parker, 1986), school leadership and context (e.g. Dempster, Carter, Freakley, & Parry, 2004; Hallinger & Leithwood, 1996; Ribbins & Gronn, 2000), factors influencing school leader practices (e.g. Begley & Johansson, 2003; Bossert, Dwyer, Rowan, & Lee, 1982; Goldring, Huff, May, & Camburn, 2008), values in school leadership (e.g. Murre, 2017; Parkes & Ross Thomas, 2006; Richmon, 2003), school leader autonomy (e.g. Higham & Booth, 2018;

Different scholars, however, conceptualize school leaders' personal beliefs[41] in notably different ways. In some studies, personal beliefs are seen as just one of the many personal factors that influence school leader actions and behavior. In these studies, personal factors, including personal beliefs, are conceptualized and positioned alongside organizational and societal factors. In other studies, personal beliefs play a much more prominent role. In these latter studies, personal beliefs are conceptualized as shaping or filtering other factors at the personal, organizational, and societal levels. At their core, the two paradigms position personal beliefs and the interplay between other factors at the personal, organizational, and societal levels in different ways.

Bossert et al. (1982)'s review is a suitable example of the paradigm that conceptualizes school leaders' personal beliefs as one of the many personal factors that influence school leader actions and behaviors. The researchers conducted a literature review focused on school leaders' instructional management role. Their final model can quite easily be applied more broadly to encompass the full scope of school leaders' roles, including decision-making. Bossert et al. found that principal management behavior is influenced by various characteristics at the personal, district and, in their words, external levels. Personal characteristics were limited to sex, training, and experience. District characteristics referred to the broader organization and included the informal culture, rules, and policies of a school district.[42] External characteristics referred to various societal influences on school leader behavior, such as parent pressures, the presence of minority populations, and the complexity of legal constraints. Their model acknowledges both the central role of school leader behavior in school functioning, and the influence of other factors at different levels on school leader behavior. Notably, characteristics of the school itself are not included. The model does include school climate and instructional organization but considers these to be the result of—rather than a factor in—school leader behavior.

Cranston et al. (2003) have provided an exemplary case of the paradigm that conceptualizes personal beliefs as shaping or filtering other factors in decision-making at the personal, organizational, and societal levels. According to Cranston et al., decision-making processes are triggered by a critical incident. This critical incident can potentially be "illuminated" by nine competing factors at the professional, organizational, and

Keddie, 2018), policy enactment in schools (e.g. Ball et al., 2012; Braun, Maguire, & Ball, 2010; Spillane, Reiser, & Reimer, 2002), factors influencing school practices (e.g. Friedman, 2003; Honig & Hatch, 2004), and sense-making in organizations (e.g. Weick, 1995; Weick, Sutcliffe, & Obstfeld, 2005).

41 The use and interpretation of the term beliefs is explained in the methodological approach section (4.2).

42 The school district is an organizational construct that is not present in the Dutch education system. To a certain extent, a "district" is analogous to a "school board." While U.S. principals are accountable to their school district, Dutch school leaders are accountable to their school board. School districts and school boards are both ultimately responsible for a school's educational quality and finances.

societal levels. After the critical incident takes place, an individual attempts to resolve the challenge. This individual, the researchers found, "is in no way neutral but brings to the dilemma his/her own values, beliefs, ethical orientations and personal attributes that have been shaped over time by a variety of sources" (Cranston et al., 2003, pp. 141-142). More than in many conceptualizations in the educational leadership tradition— such as those presented by Bossert et al. (1982) and Hallinger and Leithwood (1996)—the individual is portrayed as an active interpreter. Personal values, beliefs, and attributes are at the center of this model, as they provide the lens through which the school leader interprets not only the critical incident, but also the factors that may influence decision-making.

Since the reviewed literature does not provide arguments as to why one paradigm should be preferred over the other for the exploration of Dutch secondary school leaders' intervention motives, characteristics of both were used to shape the research questions and, subsequently, the interview protocol that guided this study. Following the dominance of school leaders' personal beliefs in their decision-making according to the paradigm exemplified by Cranston et al. (2003), the first research question is as follows:

1. How can school leaders' personal beliefs be characterized?

Though positioned somewhat differently, both Bossert et al. (1982) and Cranston et al. (2003) distinguished factors that influence school leader decision-making at different levels. For this study, they were grouped under the headings of personal, organizational, and societal factors. To enable school leaders to reconstruct their motives in school intervention decision-making in sufficient detail, the researcher first approached this theme via a specific intervention, one with regard to differentiation (see the methods section 4.2.1 for an explanation). This approach generated the second research question:

2. What role do personal, organizational, and societal factors play in the intervention decision regarding differentiation?

Lastly, to find out whether the findings on decision-making regarding the differentiation intervention should be considered on their own or whether they are indicative of school leaders' intervention decisions in general, the researcher crafted the third research question:

3. What role do personal, organizational, and societal factors play in intervention decisions in general?

The study's methodological approach is outlined in the next section (4.2). Sections 4.3, 4.4, and 4.5 present the findings concerning the three research questions. The chapter concludes with a summary and discussion of the findings (4.6). The key concepts that underlie this study—*school autonomy*, *school intervention*, and *school leader*—have been defined in Section 1.2. The relevant characteristics of Dutch secondary education have been elaborated in Section 1.3.

4.2 Methodological approach

In this section, the choice to focus on an intervention in the area of differentiation is described first (4.2.1), followed by the selection of the school leader sample (4.2.2). Subsequently, details are provided about the interview design (4.2.3), the analysis of the interviews (4.2.4), and the findings (4.2.5).

4.2.1 Focus on differentiation

In an attempt to make the topic of school intervention decision-making concrete enough for school leaders to share their practices, the researcher applied the criterion of specificity. This criterion means that "the interview should bring out the specific elements which determine the impact or meaning of an event for the interviewees in order to prevent the interviews from remaining on the level of general statements" (Flick, 2009, p. 151). To both connect with school leaders' current intervention preferences and enable a potentially large sample, the researcher decided to select an intervention from the three intervention types that appeared most frequently in the questionnaire: (1) digital tools and methods for teaching and learning (11.6%); (2) peer professionalization (6.7%); and (3) differentiation, individualization, and personalization (6.1%). Of these three intervention types, the final is considered the most complex in terms of implementation. From this point onward, differentiation, individualization, and personalization are collectively referred to as differentiation. Casteren van, Bending-Jacobs, Wartenbergh-Cras, Essen, and Kurver (2017, p. 15), quoting Coubergs, Struyven, Engels, Cools, and Martelaer de (2013), defines differentiation as follows:

> proactively dealing with differences between students, in order to realize maximum learning efficiency for all students. Teachers respond to differences in level, pace and interest. Differentiation shows itself in didactic behavior, in the vision on education and in the basic attitude of the teacher.

This definition was adopted for this study and included the adjacent interventions personalization and individualization, which involve both student-centered and teacher-centered learning (Basham, Hall, Carter Jr., & Stahl, 2016).

Differentiation affects not only educational (pedagogical) matters but also organizational and staff-related issues. More than the other two popular interventions, differentiation often impacts—in time—the entire school (i.e., students, teachers, and the school organization as a whole). The initiation and implementation of differentiation interventions are not seldom accompanied by the introduction of digital tools and methods and/or staff professionalization programs. The researcher assumed that a more complex and integral intervention would provide a richer context for studying the potential influence of a large variety of factors at the personal, organizational, and societal levels than a less complex intervention would.

4.2.2 Selection of school leaders

Ten school leaders were invited to participate in the interviews. They were purposively selected following their indication—either in the survey or one of the researcher's professional networks—that they had introduced a differentiation intervention at their schools. Purposeful sampling is based on the intention to select individuals who have experienced a study's key concept(s). Additionally, the researcher applied the strategy of maximal variation sampling, in which "diverse individuals are chosen who are expected to hold different perspectives on the central phenomenon" and who consequently "provide a complex picture of the phenomenon" (Creswell & Plano Clark, 2011, p. 174). Hence, from a larger group of school leaders who had introduced a differentiation intervention, 10 were selected according to their differences in terms of a variety of school leader characteristics (e.g., sex; years of school leader experience; educational attainment; years of teaching experience; and participation in in-service trainings, school leadership programs, or professional networks) and school characteristics (e.g., location, size, school type, available educational tracks, and demographic trends).

This selection process led to an interview sample that consisted of six female and four male school leaders between the ages of 50 and 62 years ($\mu = 58.2 \mid SD\ 3.9$) and with 4 to 25 years of school leader experience at both their current and previous schools ($\mu = 10.5 \mid SD\ 6.7$). One school leader held a PhD degree, seven a university degree, and two a degree from a university of applied sciences. All school leaders had a substantial amount of teaching experience, between 8 and 26 years ($\mu = 18.5 \mid SD\ 5.9$), and differed in the extent to which they participated in-service training, school leadership programs, and professional networks. Seven school leaders were responsible for one school, two for two schools, and one for three schools ($\mu = 1.4 \mid SD\ 0.7$). These schools were spread across six of the Netherland's 13 provinces; two were located in one of the four main cities of the Netherlands, and the other eight were in smaller cities or towns. Two schools were located in regions with forecasted student population growth, and the other eight were in areas in which the student population was expected to gradually decline. Student

numbers ranged from 529 to 2,051 (μ = 1,295 | SD = 526). All educational tracks from vocational to pre-university education were represented in different compositions, ranging from single-track schools to comprehensive schools that offered all tracks. Five schools were Protestant, two were interconfessional (of Catholic origins), and one was ecumenical. The remaining two schools were public schools. Five schools constituted their own individual school board, which means that the school leader fulfilled the double role of governor and principal. The other five schools were part of school boards that included more than one school, which meant the presence of one or more governors other than the school leader. The number of schools within these five larger school boards ranged from 3 to 26 (μ = 10.2 | SD 7.8). All schools had been rated "adequate" by the Dutch Inspectorate of Education, meaning that they fulfilled the statutory requirements (Dutch Inspectorate of Education, 2017). All 10 school leaders who were invited to participate in the interviews agreed to cooperate.

4.2.3 Interview design

The interviews were semi-structured (Galetta, 2013). The interview protocol was tested in a pilot interview with a secondary school leader, after which various small alterations regarding phrasing, order, and the inclusion of questions were made for the final protocol (see Appendix C). One more substantial change was made: The original intent was to ask school leaders two separate questions about their personal motives and the values underlying their school leadership. Both terms have been interpreted and defined in many ways (Kleinginna & Kleinginna, 1981; Murre, 2017; Parkes & Ross Thomas, 2006) and tend to show overlap regarding their ability to explain actions or behaviors. This overlap—which also concerns other related terms such as morals, ethics, ideals, virtues, dispositions, attitudes, motivations, needs, beliefs, understandings, and convictions—is demonstrated in Murre (2017)'s literature review on the concept of values. The interconnectedness between motives and values clearly emerged during the pilot interview in which the two concepts appeared in separate questions. When asked about personal values in his school leadership immediately after having explained his personal motives, this school leader indicated that these two concepts are closely connected and responded by referring to his previous answer. Because a clear distinction between motives and values appeared largely artificial and of little relevance for this study's aim, the researcher decided to integrate the two notions in one question. In the remainder of this study, the overarching term beliefs is used. Beliefs are defined as the determinants, convictions, or driving forces underlying school leaders' behaviors or actions.

Each interview followed the same structure, featured the same elements, included the same key questions, and was divided into three parts. In the first part, school leaders were asked to orally list a set of personal (school leader), organizational (school), and societal characteristics. In the second part, the three research questions were explored by means of a semi-structured series of questions. In the third and final part, school leaders were presented with a list of 59 factors at the personal, organizational, and societal levels that potentially affect school intervention decisions. The list featured a wide variety of factors based on both the survey data and the literature review mentioned in the introduction. School leaders were asked to score each factor separately, according to the influence of that item on both the decision to introduce the specific differentiation intervention and school intervention decisions in general.

The factor list was included in the interview protocol for three reasons. First, the researcher wanted to obtain an overview of the relative influence of a wide variety of factors on school intervention decisions. The second aim was to counterbalance potential biases caused by the content and sequence of answers given in the course of an interview (Galetta, 2013). Following one line of reasoning potentially obscures other lines of reasoning. Introducing a large variety of factors was intended to either confirm their relative unimportance or reveal that they do in fact have a noteworthy influence. As such, the factor list was used as a form of data triangulation to increase the validity of the interview findings. A third reason to include the list of factors was to reveal any as-of-yet unidentified differences between school intervention decisions in general and decisions about the specific differentiation intervention. Large differences would impede attempts to generalize the interview findings to intervention decisions in general. Again, the factor list was used as a form of data triangulation to increase the validity of the interview findings.

The factor list was composed of 16 personal, 27 organizational, and 16 societal factors. School leaders were asked to score each factor according to the following scale:

1. This factor did not influence my intervention choice(s).
2. This factor had a small influence on my intervention choice(s).
3. This factor had a big influence on my intervention choice(s).
4. This factor had an essential influence on my intervention choice(s).

The interviews lasted an average of 1.5 to 2 hours. Nine interviews took place in school leaders' offices, and one in a public meeting location.

4.2.4 Analysis of the interviews

The 10 interviews were audio-recorded and transcribed verbatim. As a first step in the analysis of the interview data, the researcher defined the main analytical units (Creswell & Plano Clark, 2011) of this study during first cycle coding (Miles et al., 2014). Following the three guiding research questions, the analytical units were (1) school leaders' personal beliefs regarding their school leadership, (2) the motives underlying school leaders' differentiation interventions, and (3) the motives underlying school leaders' school intervention decisions in general. The second step involved paraphrasing all relevant interview passages from the transcripts regarding the three analytical units. To facilitate later reviewing, all paraphrases were accompanied by the corresponding page number in the transcript. As a third step, all paraphrases with similar meanings were inductively categorized and provisionally coded during second cycle coding (Miles et al., 2014). During this coding process, notes were added for any reflections related to the analytical units. Frequent notes became codes. Various categorization and coding rounds were executed in search of pattern codes: codes with enough depth and detail to allow for meaningful distinctions between the different categories. As a fourth and final step in the analysis, all interviews were reread and searched for missing or disconfirming evidence (Creswell & Plano Clark, 2011). This procedure was undertaken to increase the reliability of the coding. Steps 2 to 4 were consistently executed for each of the analytical units.

For the first two analytical units, the coding procedure led to four pattern codes for which the clustered paraphrases demonstrated strong resemblances in significance. These pattern codes, moreover, appeared in most school leaders' accounts. Table 4.1 shows the four clusters (codes) of frequently shared personal beliefs that derived from the inductive coding. It demonstrates that each cluster of beliefs was shared by at least eight school leaders. One school leader voiced two of the shared beliefs, and the others expressed three or four of the shared beliefs. The clusters of shared personal beliefs are defined and illustrated in Section 4.3. Relevant observations for additional codes are presented in Sections 4.3.3 and 4.3.4.

Cluster (code) of personal beliefs	School leader #									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
The need to connect, collaborate, and focus on relationships	X	X	X			X	X	X	X	X
The need to act meaningfully and search for moral purpose, significance, and fulfilment			X	X	X	X	X	X	X	X
The need to facilitate talent development	X	X		X	X	X	X	X	X	X
The need to facilitate well-being and provide a safe and respectful environment		X	X	X	X	X	X	X	X	

Table 4.1: Four clusters (codes) of personal beliefs, including the distribution across the school leaders.

There were only nine personal beliefs that could not be categorized into one of these four shared clusters. Three of these beliefs—"to be in control", "to take responsibility," and "to finish what your start"—were uttered by two school leaders, the others by only one. Examples of these singular beliefs are "fear of risk aversion," "group interest over individual interest," and "curiosity."

Table 4.2 provides the four clusters (pattern codes) of shared reasons[43] that underlay the school leaders' decisions to pursue the differentiation interventions, including the distribution across the interviewed school leaders. Each cluster was referred to by at least six school leaders. Individual school leaders were motivated by at least two of the four shared clusters of reasons, and four of them were driven by all four. The clusters of shared reasons are defined and illustrated in Section 4.4. Relevant observations for additional codes are presented in Sections 4.4.2 and 4.4.3.

Cluster (code) of reasons to pursue differentiation intervention	School leader #									
	1	2	3	4	5	6	7	8	9	10
The aim to provide education that is tailor-made and offers students opportunities for maximum talent development	X	X			X	X	X	X	X	X
The aim to provide education that motivates students and positions them in a more active role	X	X	X	X	X		X	X	X	X
The aim to provide education that prepares students for their future roles in a changing society	X	X	X		X		X		X	X
The aim to offer an education profile that improves the school's image and is distinctive compared to that of surrounding schools	X	X		X	X	X	X			

Table 4.2: Four clusters (codes) of reasons to pursue a differentiation intervention, including the distribution across the school leaders.

Again, there were only a handful of reasons—seven, to be precise—that deviated from these four shared clusters. Two reasons were shared by two school leaders: "more dynamics/ flexibility in the school" and "a negative experience of their own children regarding current school practices." The other five divergent reasons were expressed only once. Examples of these singular reasons are "meeting the labor market needs of the region," "feedback from the Inspectorate of Education," and "fewer drop-outs in tertiary education."

Regarding the third analytical unit— the motives underlying school leaders' school intervention decisions in general —analysis of the paraphrases illustrated that for all school leaders, these motives were the same as those underlying the differentiation intervention. Therefore, no separate coding scheme was developed for this analytical unit. This finding is elaborated upon in Section 4.5.

43 For clarity, the cluster titles are abbreviated in Table 4.2. The full cluster titles are presented in Section 4.4.

For each of the factors on the list, the mean score and standard deviation were calculated and the number of respondents—not all school leaders scored all factors—presented for both the differentiation intervention and school interventions in general. The resulting scores are presented per level (personal, organizational, societal) in Appendices E–G.

4.2.5 Presentation of the interview findings

The school leaders were promised anonymity, which is why revealing details are disguised, all school leaders are referred to as male, and quotations are signified with a sequence number ranging from 1 to 10. Whenever the term school leaders is used in the findings section, it refers to the 10 school leaders of the interview sample. The quotations illustrating the findings were chosen according to their representativeness of both the coded segments in that particular category and the school leader sample.

4.3 School leaders' personal beliefs

To explore the first research question addressing the personal beliefs forming the foundation of the respondents' school leadership, the researcher asked the school leaders to describe their beliefs and how these beliefs manifest themselves in their school leadership. The related findings are presented in the next two sections (4.3.1 and 4.3.2), followed by a brief observation regarding their beliefs about students' cognitive achievement (4.3.3). Subsequently, the relation between their personal beliefs and school mission statements is explored (4.3.4). A short recapitulation of the main findings closes this section (4.3.5).

4.3.1 Interpretation of beliefs

The interviews, first, confirmed that the notions motives and values are interpreted rather broadly and used interchangeably. Most school leaders interwove the notions with similar concepts such as personal mission, vision, beliefs, experiences, character traits, ethics, and preferences. In the participants' accounts, these different notions seemed to merge seamlessly, and consequently, they were often difficult to distinguish from each other in the analysis. The following quotation illustrates these close connections.

> That is a very good question and one that has a lot to do, in my view, with the values with which you shape your life. I cannot separate work life from private life. Of course, I have a different role here . . . but consistence between the two [roles] is required if you want to be happy. Well, these are all very big words, but, well… I am very much driven by values that are related to connection, with mutual cohesion in a community. Whether that is a family, a village, a school, a society,

> or the world. And I guess that I personally become happiest when I do nice things together with other nice people. That is actually the core for me. (SL3)

An inextricable interplay between school leaders character traits, values, preferences, and goals became evident when the participants were asked to describe their motivations and values in their school leadership. Apparently, any overt distinction between these notions was considered either non-existent or irrelevant by the interviewed school leaders. This finding confirms earlier findings from, among others, Begley (2003), Richmon (2004), and Parkes and Ross Thomas (2006). For this reason, all utterances regarding these notions are presented under the term (personal) beliefs.

4.3.2 Four dominant personal beliefs

Even though all school leaders gave a very personal account—linked to their biographies and images of school leadership— their personal beliefs were strikingly similar and can be summarized in four overarching beliefs. These are listed below and illustrated by quotations. Table 4.1 demonstrates that each of the four beliefs was shared by at least eight school leaders, that one school leader voiced two beliefs, and that the others reported three or all four.

1. The need to connect, collaborate, and focus on relationships

In their school leadership, school leaders highly value the aspect of working together and being in connection with other people. They strive to improve existing relationships and encourage new ones, both between colleagues and between colleagues and students.

> The main personal motivation in my school leadership is the quality of the relation with students and colleagues. The search for intrinsic motivation and to connect and encourage others on this matter. [I am a school leader,] it is my role to reach people. (SL1)

> I think it is very important to pay attention to team-building, to creating a good atmosphere. And I think, well, yes, relations lead to performance. I think it is very important to invest considerably in relationships with people. Because I am so focused on relationships, I found it very hard [in the beginning of my school leadership] to make unpopular decisions. (SL2)

2. The need to act meaningfully and search for moral purpose, significance, and fulfilment

School leaders feel a great urge to act meaningfully, to matter, and to be of added value in the lives of the people and society that surround them. In their school leadership, they strive to express their moral purposes on a daily basis.

> It is my personal motivation to matter. I want to contribute to the development of young people. (SL5)

> In my previous job [outside education] I missed the moral purpose. . . . It is my personal motivation to, at least once every day, consider if what I do is in the best interest of the students. (SL9)

> I cannot imagine life without searching for significance. . . . It may sound weird, but I very much enjoy being in conversations with adolescents about their behavior and the implications of their behavior. (SL10)

3. The need to facilitate talent development

School leaders find helping others—both colleagues and students—develop their talents one of the most essential aspects of their school leadership. They believe everybody has talents, and their mission is to stimulate the search for and development of these talents.

> Yes, seeing colleagues' talents and qualities and being able to really excite people. I then say, "Hey, get out of your comfort zone, and go and do that, something new." (SL5)

> It is all about development, growth, talent, opportunities, perspectives of the future. . . . If you are lucky enough, you encounter people at school who actually see you, who see your talent, and who will catch you the moment you fall and give you new opportunities. . . . I think these things are very decisive and up to us as a school to provide. (SL7)

4. The need to facilitate well-being and provide a safe and respectful environment

School leaders view the provision of a safe and respectful pedagogical environment to be one of the key aspects of being a school leader. They see well-being as the primary condition of all development.

> It is all about well-being and finding the right balance between autonomy and safety. I do not want to be the daddy of the school, but I do want for everybody who works at this school to belong here and feel at home and to do things from his own professional autonomy. (SL6)

> I try to provide an environment, together, in which children and learn a lot, and are happy, and feel safe to express themselves. But in which teachers also feel safe to express themselves. Yes, that is a fantastic party. (SL8)

This set of four shared beliefs indicates a strong, value-driven, holistic, people-centered orientation with an emphasis on relationships with and on the development and well-being of students and colleagues. Students' and colleagues' development and well-being are school leaders' main drivers for action. Divergent beliefs were hardly encountered. Various school leaders additionally noted that the role of school leader, as compared to other functions in the school organization, predominantly enabled them to organize education according to their personal beliefs.

4.3.3 Belief in cognitive student achievement

In line with earlier findings from the questionnaire and the comparative analysis (see Section 4.1), none of the school leaders mentioned boosting cognitive student achievement as a personal belief related to his school leadership. This, of course, does not imply that school leaders do not value cognitive student achievement as such. It could, for example, be an element in their wider notion of talent development or considered part of the basic requirements of any educational program. This finding does imply, however, that increasing cognitive student achievement as such is not a distinctive belief guiding their school leadership.

4.3.4 Personal beliefs and school mission statements

In answer to a question about the relation between their personal beliefs and the school's mission statement,[44] all school leaders acknowledged a strong relationship between the two. Some school leaders had deliberately sought a school with a mission statement close to their personal beliefs.

44 The mission states why a school exists. It is a statement of its fundamental purposes. The vision, on the other hand, is an articulation not of purpose, but of a preferred future for the school (Gurley, Peters, Collins, & Fifolt, 2015). Both notions clearly serve two different purposes but are often understood and used interchangeably (Gurley et al., 2015). Though goals—the activities necessary to achieve the school vision—are more clearly discernible than the other two notions, in Dutch school practice they tend to be mentioned in one breath with the other two terms. Because of the interchangeable and often inextricable use of the three notions, the collective term (school) mission statement is used when referring to school leaders' remarks about their schools' mission, vision, and goals.

> There is a very good match between my personal motivation and the school's mission, vision, and goals. I would not be able to work in a school with a divergent set of beliefs and objectives. (SL3)

> [The school's mission statement] has to match one on one. . . . If I had not felt a connection during the job interview, I would have looked for another school. (SL6)

Because these school leaders had entered a school that matched their personal motives, they could continue to support or build on the present mission statement. Other school leaders recalled that they had not so much sought a school that fit their personal beliefs, but gradually modified their school's mission statement to match their personal beliefs.

> [Upon my start as a school leader at this school,] I did not feel any connection with the school's mission statement. . . . It might be naïve, but I was hired to change school policies. So I never cared about the school's mission, vision, and goals, because I always believed there would be a new one[45]. . . . The current mission statement matches my personal motivation very well. . . . At this school, I can be myself. (SL5)

> The school plan has changed totally from that of the previous leadership. . . . The school is being made after my views. I hope one can see that this is a [name school leader] school. (SL8)

4.3.5 Conclusion

The 10 school leaders who were interviewed expressed shared core beliefs conveying a strong, value-driven, holistic, people-centered orientation, with an emphasis on relationships with students and colleagues and their development and well-being. School mission statements evolve to match these beliefs so that over time, school leaders' personal beliefs are extended to and embedded in the school organization as a whole.

4.4 Personal, organizational and societal factors influencing the intervention decision regarding differentiation

Now that school leaders' personal beliefs related to their school leadership have been clarified, the second research question is addressed: What role do personal, organizational, and societal factors play in the intervention decision regarding differentiation?

45 This singular pronoun that refers to the plural entity of mission, vision, and goals underlines the earlier observation that many educational practitioners regard these three elements as a single construct.

The findings first concern school leaders' reported motives for pursuing the specific differentiation intervention (4.4.1). These findings are then followed by an observation on the role of student achievement in intervention decisions (4.4.2). Subsequently, the relative importance of personal, organizational, and societal factors is analyzed from a complementary perspective utilizing the list of factors school leaders scored (4.4.3). A short interpretation of the main findings closes this section (4.4.4).

4.4.1 Four dominant reasons for differentiation interventions

Despite the wide variety of school leaders who were interviewed and the very different schools they represented, their justifications for their individual differentiation interventions again showed remarkable similarities. The analysis revealed a set of four primary shared reasons. These are presented below and illustrated by quotations. Table 4.2 clarifies that each cluster was referred to by at least six school leaders. Individual school leaders were motivated by at least two of the four shared clusters of reasons, and four of them were driven by all four.

1. The aim to provide education that is tailor-made—in terms of both extra challenge and support—and that offers students opportunities for maximum talent development

> We mainly started this intervention to challenge our students. Look, a student who is not challenged will get bored and, consequently, will not learn. We just try to serve the student in a customized way because if you overstimulate a student, he will not learn either. But if you are capable of something with a little bit of support, you will even get enthusiastic about it. (SL5)

> [I want to provide] many opportunities in which individual or small groups of students can choose between deep or broad learning, remediation, and outside of school learning, can develop their talents. . . . To captivate them and keep their attention. To start from their curiosity. To provide learning opportunities when the student is ready. To connect the student. (SL7)

2. The aim to provide education that motivates students and positions them in a more active role, one in which they direct and own their own learning process, which also affects the role of the teacher

> I think a school today should organize its education such that students are stimulated to develop their ownership and leadership and maneuver relatively freely though their school weeks. . . . This requires teachers and other staff members who can respond to this. (SL1)

> I think that in our school, with a fairly traditional teaching style, the teachers toil and—to exaggerate slightly—the students consume. . . . So also in that area, I want, we want to create a different mindset. So more responsibilities at the student level in combination with 21st century skills. (SL2)

3. The aim to provide education that prepares students for their future roles in a changing society

> Society develops itself in a direction—and whether this is good or bad is not the question—in which citizens must possess a brain, a heart and a backpack in order to stand their ground. . . . We believe that people can only stand their ground if they know which choices to make, but also the reasons behind these choices—this relates to values—to be in control of their own lives. (SL3)

> This society is so much more individualistic and so many more moments of choices and so many more responsibilities that people already bear at a very young age. [When I was young,] the world was pretty simple, and choices were very limited. Then I look at today's children and think, "What complex issues do they have to face, and what do they have to form an opinion about?" That is just a lot. (SL7)

4. The aim to offer an education profile that improves the school's image and is distinctive compared to that of surrounding schools

> The school had a bad image at the time; the sense of urgency was quite high to attract new students. And, yes, then I came up with the idea to start courses [with a specific profile]. We were the first to start these courses in our province and, actually, in the Netherlands. It was a success right from the start. (SL2)

> At the time, the school was more dead than alive, which led to a sharp decline in student numbers. [In order to change this trend], we agreed to position ourselves with an educational profile that the other secondary schools in our surroundings did not yet offer. (SL4)

As illustrated in the methodological approach section (4.2.4), divergent reasons were hardly encountered.

4.4.2 Student achievement as a motive

In agreement with the observations presented in the introduction (4.1), school leaders seldom mentioned research outcomes as a motivation for their differentiation

intervention. Nor was improving student achievement—as measured via cognitive outcomes in core subjects such as language and mathematics—a prime reason for differentiation. When school leaders did refer to student achievement in relation to differentiation, they linked it to the four outcome indicators of the Inspectorate of Education's assessment framework (Dutch Inspectorate of Education, 2013). As long as the Inspectorate of Education judges these outcome indicators as sufficient, school leaders did not feel urged to further improve them.

Only two school leaders mentioned a reason somewhat related to student achievement. For one, "better results" were a reason for differentiation; that participant added that "each student is capable of more than he or she thinks" (SL5). Another school leader pointed to an enormous growth in student numbers, putting pressure on the quality of education and causing a drop in "educational outcomes" (SL6). In both cases, however, these reasons were mentioned among various others that were not related to cognitive student achievement.

Various other school leaders mentioned student outcomes indirectly, indicating that it had not been a motive in their decision-making process. With the differentiation intervention, one school leader aimed to bring "more dynamics in the school, since the school is stable regarding educational outcomes" (SL2). This statement implies that the improvement of educational outcomes was not a reason for introducing the specific intervention. Another school leader positioned "an increase in student achievement [as] the byproduct of school interventions" (SL8) rather than as an aim in itself. Various other school leaders downplayed the importance of student outcomes with references to the purpose of modern education, which, according to one school leader, "entails more than good outcomes and keeping order" (SL9).

All in all, for eight school leaders, student achievement was not an explicitly stated reason to pursue differentiation, while the other two mentioned this factor among a wider variety of reasons.

4.4.3 Personal, organizational, and societal factors

The first three dominant reasons that school leaders introduce differentiation interventions stem from views about the pedagogical purpose of education. In their accounts, school leaders relate these reasons to their personal beliefs regarding their need to facilitate talent development and to act meaningfully and search for moral purpose, significance, and fulfilment. On initial consideration, the fourth common reason—namely, a school leader's responsibility to safeguard the continuity of the school—appears to have an organizational character. However, when analyzing the argumentation behind this

motive in more depth, the researcher found that at the end of the decision-making process, there is, again, a personal motive: Even when an organizational situation demands an intervention, there are a myriad of interventions from which to choose, and this is exactly where school leaders' personal beliefs enter the stage. This dominance of personal beliefs is illustrated by the following quotation:

> There was enormous pressure on me because of the problems felt by the teachers. That was the motivation to search for what was needed. But once I had discovered a way, I thought, "Yes, this really suits my love for these kids and what I think is good for them. I really believe that." So, the motivation was the sense of urgency in my team, but the current design is strongly related to my personal drive. (SL9)

Another school leader emphasized the dominant role of his personal situation in his decision regarding the differentiation intervention:

> I felt very sorry that talent was being wasted. There were children with great abilities, and some of those children were just waiting until it was 3 p.m., until they finally got to do something useful. And that became very personal, too, because I also had such children at home [attending the same school] who articulated this very clearly. They clearly demonstrated the course of things at my school, which made me realize what to do. (SL10)

Hence, even though the shared motive regarding the schools' education profile and image on the surface seems to be organizational in nature, a closer look discloses that personal beliefs tend to also underlie this motive. When prompting school leaders on personal, organizational, and societal factors that might have influenced their decisions, the researcher found that if anything, the interrelatedness of factors at the various levels came to the fore. This interrelatedness is often reflected in school mission statements. As described in Section 4.4.4, over time, the school mission statement tends to match the school leader's personal beliefs. When asked about the factors influencing their decision-making, the school leaders acknowledged that the mission statement provided the organizational (school policy) foundations to pursue the particular differentiation intervention. One school leader illustrated the cohesive function of the school mission statement as follows:

> Yes, well, the mission statement. I don't know if you have read it. Yes? Well, this school offers plenty of opportunities to actively develop your talents within an open, modern, challenging learning environment. Starting from respect for oneself, the others, and the environment. Well, these are clichés, of course, but

> clichés that fit me very well. I find talent development, in which children are active, very important—but from a societal context in which safety and respect are, well, very important. (SL2)

To more closely examine what factors at the personal, organizational, and societal levels might have influenced the differentiation intervention decisions, the researcher analyzed the scores the leaders gave to a list of factors (see Appendices E–G). A number of findings stand out. Five factors at the personal level received a mean score of at least 3.0: motives, values, biography, practical knowledge and experience, and intuition. The factors motives and values had particularly high scores of 3.8 and 3.7, close to the maximum score of 4. The school leaders agreed that these five factors in particular had a major influence on their decision-making about differentiation. Most other factors at the personal level had mean scores between 2.0 and 2.9, indicating an average influence, while only two factors—the number of school locations under responsibility and sex—scored below 2.0.

In comparison, the school leaders indicated that organizational factors had less impact on their decision-making than factors at the personal level. The majority of organizational factors received mean scores between 2.0 and 2.9, while quite a few scored below 2.0. Only mission statement and employee competences and professionality were given scores above 3.0. The qualitative analyses of the interviews revealed how school leaders either find schools with appropriate mission statements or gradually change schools' mission statements to match their personal motives and values. Therefore, the importance attached to mission statements was not a surprise. The substantial influence ascribed to employee competences and professionality on the factor list was not so overtly conveyed during the interviews. Employees were mainly mentioned in a broader context of school leaders' focus on relations in the school, talent development, and well-being. Various school leaders did indicate that the differentiation intervention had had consequences for employees, as it required new or additional competences. The results on the factor list implied that school leaders also took staff competences and professionality into account when deciding on the differentiation intervention. The factors image (2.9) and continuity (2.7) received relatively high scores. This outcome is in line with the findings from the qualitative analyses showing that the desire to offer an education profile that would improve the school's image and be distinctive compared to those of surrounding schools was one of the four main reasons for initiating a differentiation intervention.

Turning to factors at the societal level, these had a smaller impact on the school leaders' intervention choices than the vast majority of factors at the personal and organizational levels. The three highest scoring factors were good practices of other secondary schools

(2.7), competing secondary schools (2.5), and schools for tertiary education (local) (2.5). Combined with the scores for the other factors, these results indicate that schools in close vicinity—schools with which school leaders are likely to be in contact—have a more prominent influence on school leader decision-making than, for example, research evidence, policy initiatives at the national level, subsidies, and facilities. This outcome corroborates the interview findings, in which these latter factors were not mentioned. The score for the factor assessment framework of the Inspectorate of Education (2.4) is noteworthy, considering that differentiation is included in the assessment framework. This result seems to suggest that the school leaders would have initiated the differentiation intervention regardless of its inclusion in the assessment framework.

Table 4.3 presents the five factors that across the three levels most substantially influenced the decision to pursue the specific differentiation intervention.

Factor	Level	μ	SD	N
Motives (in school leadership)	Personal	3.8	0.4	10
Values (in school leadership)	Personal	3.7	0.5	10
Mission statement	Organizational	3.6	0.5	10
Practical knowledge and experience	Personal	3.2	0.6	10
Employee competences and professionality	Organizational	3.2	0.6	10

Table 4.3: Five factors with the greatest influence on the decision to pursue the specific differentiation Intervention.

4.4.4 Conclusion

The reasons the school leaders implemented a differentiation intervention appeared to be closely related to their personal beliefs. This resemblance was also emphasized by the school leaders themselves. When asked whether their personal beliefs had played a role in their decision to pursue differentiation, each one answered that this had indeed been the case. Individual organizational and societal factors played a smaller role in the school leaders' decision-making concerning the differentiation intervention. However, the school mission statement—uniting factors of the three levels—did highly influence their differentiation decision. These observations are supported by the factor list results.

4.5 Personal, organizational and societal factors influencing school intervention decisions in general

The third and last research question asks whether the findings for the particular differentiation interventions must be considered on their own or whether they are indicative of school leaders' school intervention decisions in general. When asked about the extent to which their answers regarding the decision-making process behind the

differentiation intervention applied to other school intervention decisions as well, all school leaders reported a strong resemblance. Their responses indicate that the motives behind their intervention decisions in general highly resemble those concerning the specific differentiation intervention. Therefore, this section is confined to presenting additional illustrations and exploring relevant nuances between general intervention decisions and the differentiation intervention decisions. The section concludes with a short recapitulation of the main findings.

4.5.1 General motives parallel differentiation motives

In the interviews, all school leaders indicated that the reasons underlying their decisions regarding the particular intervention (differentiation) resembled their reasons for pursuing other school interventions. When probed, the respondents frequently mentioned personal beliefs about the pedagogical task of education. The story of SL2 illustrates how personal beliefs and motivations make themselves felt in school intervention decision-making in general. When asked about his personal beliefs, this school leader responded

> I went into education because I enjoyed working with children. I find that helping children develop is one of the most important values in life. I believe that you must have love for children if you want to be able to fulfil this function well. That is what I find important. Second, to be able to perform as a team, to realize something together. I am a [team sport] player, a team player. When playing [team sport], I also aimed for the highest achievement, but with a group of people. I enjoy accomplishing something together, pursuing a goal. I am a real team player. But I always used to be the captain, so I like to be in control. (SL2)

The school for which this school leader was responsible had been dealing with a "bad name" for quite a while. In his search for an intervention to improve the school's image and set it apart from surrounding schools, he introduced a new educational program with a focus on sports. This sports profile was directly related to his own passion for and history with sports.

As with the specific differentiation decision, the school mission statement—matching the school leaders' personal beliefs—was an important factor in the school leaders' intervention decisions. The following quotation underlines this prominent role:

> I often see my work as a hobby that got out of hand. I think that everyone who wants to be happy in his work chooses work that suits him, and I feel that my job fits me very well. And my beliefs and the beliefs and vision of the school are very much alike. (SL9)

4.5.2 Personal, organizational, and societal factors

The analogies between motives that underlie differentiation interventions and motives that underlie intervention decisions in general that were revealed during the interviews are supported by the factor list scores (see Appendices E–G). Motives (3.8), values (3.9), practical knowledge and experience (3.4), the school leader's own biography (3.2), and intuition (3.2) were again reported to have the most influence on school leaders' decisions on school interventions in general. In the interviews, the school leaders strongly related the origins of their motives and values to their personal biographies. The high score for biography is hence in line with those accounts. Practical knowledge, experience, and intuition can be understood as forms of tacit knowledge:[46] "implicit knowledge of how things work in practice and thus knowledge based on experience" (Wassink, Sleegers, & Imants, 2003, p. 525). This finding also aligns with the interviews in which school leaders assigned a greater role to tacit knowledge in school intervention choices than to formal or explicit knowledge, such as research outcomes. According to the scored factor list, activities related to professional development (initial education, school leader training and recent professional training activities) were all somewhat more important for general decision-making than for the particular differentiation intervention.

Mirroring earlier findings reported in Section 4.4.3, the school leaders indicated that factors at the organizational level had less of an impact on their general decision-making than factors at the personal level. The majority of organizational factors received mean scores between 2.0 and 2.9, and quite a few factors scored below an average of 2.0. Only the factors "mission statement" and "employee competences and professionality" had mean scores above 3.0. The importance attributed to the mission statement has already been mentioned and illustrated by the findings from the interviews. Again, the factor employee competences and professionality was not so overtly conveyed during the interviews.

The factors image and continuity had relatively high scores for interventions in general (3.1 and 3.0, respectively). This outcome underscores what was discussed in the interviews and supports the finding that school leaders aim to offer an education profile that improves the school's image and is distinctive compared to that of surrounding schools. One factor that was hardly mentioned in the interviews—finances—was indicated as being more important for interventions in general than for the particular differentiation interventions. This indicates that resources play a role in school intervention decision-making, but to a lesser extent in relation to differentiation.

46 Similar terms that can be used to summarize and interpret these factors are *phronesis* and *practical consciousness*. Flyvbjerg (2001, p. 110), after Foucault, has defined *phronesis* as "practical reason". *Practical consciousness* has been defined by Giddens (1984, p. 375) as "what actors (believe) about social conditions, including especially the conditions of their own actions, but cannot express discursively." In this study, the term *tacit knowledge* is used to refer to the overarching concepts behind these terms.

Again, factors at the societal level were found to influence school leaders' decisions on interventions even less than the vast majority of factors at the organizational level. The three highest scoring factors on this sublist—those with a mean score higher than 2.5—were assessment framework Inspectorate of Education, schools for tertiary education (local), good practices of other secondary school(s), and competing secondary school(s). The latter three scores paralleled those for the differentiation intervention, which indicates that school leaders are very much aware of the environment in which the school operates. Regarding the influence of the Inspectorate of Education's assessment framework, it is notable that this factor had a greater influence on interventions in general (2.8) than on the specific differentiation interventions (2.4). This outcome is all the more remarkable because differentiation is included in the assessment framework. Available subsidies, (international) benchmarks, and research evidence hardly played a role when the school leaders decided on interventions in their schools.

Table 4.4 presents the five factors that across the three levels had the greatest influence on school intervention decision-making in general. These five most influential factors highly resemble those influencing the specific differentiation interventions.

Factor	Level	μ	SD	N
Values (in school leadership)	Personal	3.9	0.3	10
Motives (in school leadership)	Personal	3.8	0.4	10
Mission statement	Organizational	3.5	0.7	10
Practical knowledge and experience	Personal	3.4	0.5	10
Employee competences and professionality[47]	Organizational	3.2	0.6	10

Table 4.4: Five factors with the greatest influence on school intervention decisions in general.

4.5.3 Conclusion

Analysis of the interviews and the factor list scores reveals that the motives behind school leaders' intervention decisions in general highly resemble those concerning the specific differentiation interventions. This outcome suggests that the findings regarding the specific differentiation interventions are not self-contained, but rather indicative of many other school intervention decisions. The only two factors that exhibited a difference larger than 0.5 were recent professional training activities and finances. Both factors skewed toward general intervention choices.

47 The following three factors had a mean score of 3.2: biography, intuition (both personal factors), and employee competences and professionality (organizational factor). Of these three factors, the final one had the smallest standard deviation.

4.6 Conclusions and discussion

The aim of this chapter was to obtain a better understanding of the reasoning and motives behind the school intervention decisions taken by Dutch secondary school leaders. To this end, semi-structured interviews were conducted with 10 school leaders. The following three research questions guided this study:

1. How can school leaders' personal beliefs be characterized?
2. What role do personal, organizational, and societal factors play in the intervention decision regarding differentiation?
3. What role do personal, organizational, and societal factors play in intervention decisions in general?

In this final section, the main findings concerning the research questions are first recapitulated and visualized. Subsequently, the main findings are compared to the two dominant observations from the reviewed literature regarding the influence of factors at the personal, organizational, and societal levels and the conceptualization of personal beliefs in school leader decision-making. The section closes with remarks about the applicability and limitations of the study.

4.6.1 Main findings recapitulated and visualized

Using remarkably similar vocabulary, Dutch school leaders reported that their beliefs concerning their leadership referred to connecting and collaborating with others; a search for moral purpose and significance; and the need to facilitate talent development, well-being, and a safe learning environment. These shared core beliefs convey a strong, value-driven, holistic, people-centered orientation with an emphasis on relationships with students and colleagues and their development and well-being. School mission statements (evolve to) match these beliefs so that over time, school leaders' personal beliefs are extended to and embedded in the school organization as a whole.

The reasons that school leaders initiate a differentiation intervention are closely related to their personal beliefs. Rather than being motivated by the explicit ambition to improve cognitive student achievement or research evidence, differentiation is predominantly motivated by school leaders' beliefs about the pedagogical task of education. Three of the four prevailing reasons are related to providing education that is tailor made, that is directed at talent development, that motivates and activates students, and that prepares them for their future roles in a changing society. The fourth dominant cluster of reasons to pursue a differentiation intervention arises from the need to survive as a school. School leaders attach great importance to the school's distinctive profile and

image among neighboring schools so as to ensure student enrolment. In a system with free school choice, school leaders are responsible for ensuring sufficient enrollment and thereby securing the school's continuity. A positive image and a distinctive profile can help meet that aim, which is all the more important now that many schools are located in areas of population decline and increased school competition (OECD, 2016a).

Individual organizational and societal factors played a smaller role than most personal factors in school leaders' decision-making concerning the differentiation intervention. The main exception to this finding is the school mission statement, which tended to unite factors at all three levels and, as such, provided school leaders with the organizational (school policy) foundations to pursue the particular interventions. These mission statements, however, also closely matched the school leaders' personal beliefs. This outcome implies that over time, school leaders' personal beliefs are extended to and embedded in the school organization as a whole.

All the school leaders indicated that their personal beliefs not only influenced their decision on the specific differentiation intervention but also guided their intervention decisions in general. All in all, school intervention decisions appear to be more inspired by school leaders' personal beliefs than by any other factors, such as (external) performance indicators or research evidence. Improving cognitive outcomes in core subjects is not a determining factor in their intervention decisions. In general, cognitive student achievement is interpreted as a set of externally defined (Inspectorate of Education) standards. As long as these standards are met, Dutch secondary school leaders appear mainly motivated by holistic, development-oriented, student-centered, and non-cognitive ambitions. Figure 4.1 presents a visualization that may help with interpreting this study's main findings.

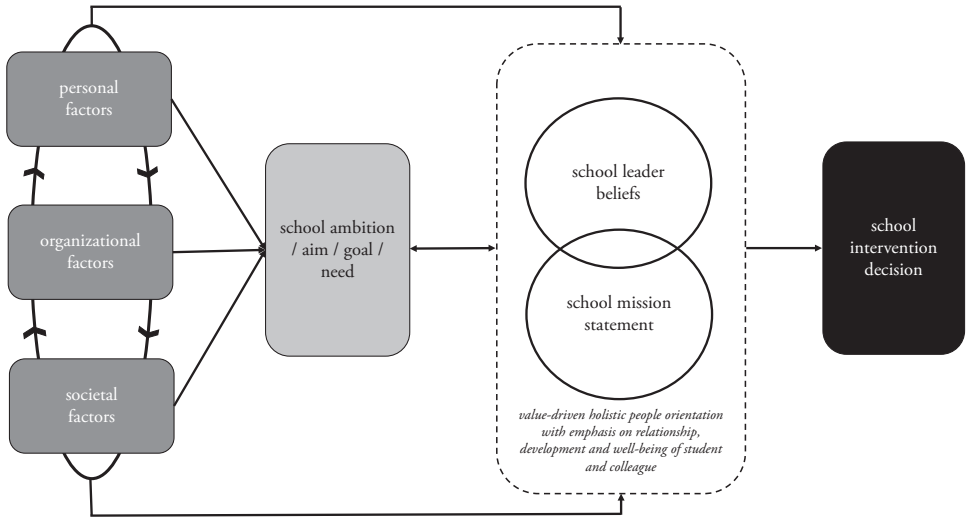


Figure 4.1: Model of school intervention decision-making by Dutch secondary school leaders.

Figure 4.1 illustrates that an interplay of various factors at the personal, organizational, and societal levels affects a certain school ambition (or aim, goal, or need). School leaders subsequently filter or interpret this ambition via the lens of their personal beliefs and the school mission statement. Personal beliefs and mission statements come to overlap, and to a greater extent than the figure indicates. Both are highly dominated by a strong, value-driven, holistic, people-centered orientation with an emphasis on relationships with students and colleagues and their development and well-being. These views act as frames of interpretation, which in turn highly influence, or even determine, the specific intervention decision that is pursued to realize the formulated school ambition. The model acknowledges that personal, organizational, and societal factors can also have a direct effect on school leaders' beliefs and school mission statements.

4.6.2 Main findings in perspective

The reviewed literature as presented in the introduction hints at two relevant observations regarding the influence of factors at the personal, organizational, and societal levels and the conceptualization of personal beliefs in school leader decision-making. Two exemplary studies were used to elaborate two different stances in the conceptualization of personal beliefs. In short, Bossert et al. (1982) saw personal beliefs as among the many personal factors that influence school leader actions and behaviors, whereas Cranston et al. (2003) found that personal beliefs play a much more prominent role.

Comparing this study's findings to those of Bossert et al. (1982) reveals both similarities and differences. Both the central role of the school leader in the functioning of the school and various factors influencing school leader behavior were confirmed by the interview findings. However, the factors that comprise the three characteristics (personal, district, external) of their model were somewhat too limited or decontextualized to describe the full scope of the interview findings. For example, only three personal factors were listed —sex, training, and experience—and these are objective in nature. Various other personal factors that emerged from the interviews—such as motives, values, and professional network—were missing. These factors, which are subjective in nature, proved to have a much larger influence on the interviewed school leaders' decision-making than did the objective factors.

The school district is an organizational construct not known in the Dutch education system. To a certain extent, the district can be interpreted as the school board, as Dutch school boards share some similar tasks and responsibilities with U.S. school districts. However, the description accompanying this characteristic came from the observation that U.S. school leaders are highly constrained by the district culture, rules, and policies. The interviews revealed that Dutch school leaders experience these constraints to a much lesser extent than do U.S. school board members. Positioning the school board as a separate characteristic among only two other characteristics would hence result in an unbalanced picture of the relatively small influence the school leaders reported their school boards having on school intervention decisions.

The external characteristics are comprised of the factors district finances, parent pressures, student challenges to administrative policies, the presence of minority populations, complex legal constraints, and numerous reporting requirements. These factors do not reflect the factors that the Dutch school leaders indicate as a major influence on their intervention decisions. However, it is likely that the relevance ascribed to various external factors differs per education system, depending on system characteristics such as school autonomy, accountability, and school choice.

The model by Cranston et al. (2003) offers a closer approximation of the interview findings than that of Bossert et al. (1982). The former model visualizes both the primacy of the individual (cf. school leaders' beliefs) and the influence of contextual factors on that individual, both of which emerged during the interviews. An intervention should align with various personal (professional), organizational, and contextual factors, but the specific intervention that is chosen to fulfil certain goals or ambitions tends to follow from school leaders' interpretation of these factors through the lens of their personal

beliefs. One finding that is not reflected in this model is the considerable importance of school mission statements in school intervention decision-making.

4.6.3 Generalizability and limitations

The main findings of this study confirm observations from previous studies on educational leadership, decision-making, sense-making, and policy enactment (see Section 4.1). School leadership and decision-making among Dutch secondary school leaders is characterized by a complex interplay of factors at the personal, school, and societal levels. The interviews demonstrated that this interplay is strongly dominated by the intertwined whole of school leader motives, values, opinions, experiences, ethics, preferences, and character traits, which are summarized here as beliefs. This is an important finding in light of the primarily organizational perspective in the majority of the literature of leadership and management, which is so dominant that individual and professional values tend to be neglected (Begley, 2003). To this observation, Begley (2003, p. 4) added that "the importance of the individual to the leadership process is usually acknowledged on the first page and henceforth lost to an unremitting collective perspective." The intertwined whole of Dutch school leader beliefs reflects a strong, value-driven, holistic, people-centered orientation with an emphasis on relationships with students and colleagues and their development and well-being. These shared beliefs are in turn closely aligned with the narratives of school mission statements. Other organizational and contextual elements tend to have a smaller influence on school intervention decisions. Follow-up research could reveal more nuances in the intertwined whole of school leader beliefs that resulted from this study. It would, for example, be interesting to study whether examining a different intervention type would yield similar findings.

As this study's findings are based on a small-scale qualitative study involving Dutch secondary school leaders, one must ask to what extent they are generalizable to school leaders from other educational sectors or systems. In this respect, the findings from a 360º multi-perspective study on effective primary and secondary school leadership in the UK by Day, Harris, and Hadfield (2001) are an indication of a potential broader applicability. Day et al. found that the effective primary and secondary school leaders from their sample exhibited a core set of leadership characteristics, one of which was "the personal in the professional." Regarding this characteristic they observed that

> the vision and practices of these principals were underpinned by a number of core 'personal values'. These concerned the modelling and promotion of respect (for individuals), fairness and equality, caring for the well being and whole development of students and staff, integrity and honesty. These core values were

> often part of strong religious or humanitarian ethics which made it impossible to separate the personal from the professional. . . . It was clear from everything said by the principals and others that the leadership actions on which their values and visions were based were primarily moral (i.e. dedicated to the welfare of staff and students, with the latter at the centre) rather than instrumental (for economic reasons) or non-educative (for custodial reasons). (Day et al., 2001, p. 43)

The quotation exhibits striking similarities with the findings of this study regarding (1) the dominant role of "personal values" in "the vision and practices of principals," (2) the similarities in "core personal values," and (3) the "moral" orientation of these personal values. The wider applicability of the model should of course be tested, but the resemblance of the findings is a promising starting point for determining whether similar conclusions can be drawn for other education systems and sectors.

5

Chapter 5

Evidence use by school leaders in school intervention decision-making

5.1 Introduction

In a rapidly changing and increasingly complex society, school leaders are "faced with challenges that are ill-structured with more than a single, right answer that demand reflective judgement" (Earl & Katz, 2002, pp. 1008-1009). In these challenging circumstances, Earl and Katz (2002, p. 1009) have found that

> there is not enough time for adaptation by trial and error or for experimentation with fads that inevitably lose their appeal. In this context, research studies, evaluations and routine data analyses offer mechanisms for streamlining and focusing planning and actions in schools.

In recent years, evidence[48] is increasingly considered as a basis for decision-making, performance management, and accountability in education (Earl, 2015; Prøitz et al., 2017a). Brown (2015, p. 1) has claimed that evidence is "vital to providing validity to practice." Consequently, pressure to use evidence to inform educational policy and practice has intensified internationally. In the Netherlands, many initiatives have been undertaken so Dutch practitioners can benefit from educational research (Nijland, Bruggen van, & Laat de, 2017). Despite current discussions and studies about the importance and potential value of evidence use in education, relatively little is known about the actual use of evidence in educational decision-making, both in the Netherlands and internationally (Farley-Ripple, 2012; Honig & Coburn, 2008; Prøitz et al., 2017a). Do practitioners use evidence in their considerations, and if so, what evidence sources do they use? Academic studies on the use of evidence in educational practice often have a structural or organizational focus and can be fairly normative in their approach (Demski & Racherbäumer, 2017; Prøitz, Mausethagen, & Skedsmo, 2017b). Rather than studying the actual use of evidence in practice, these studies focus on conditions that either enable or hinder evidence use in schools, including user characteristics (Brown, 2015; Coburn & Turner, 2011; Schildkamp, Poortman, Luyten, & Ebbeler, 2017). Evidence is, moreover, often defined rather narrowly. Research that includes both school data and research evidence, for example, is rare (Brown et al., 2017). Moreover, in both current debates and research on evidence use, evidence is not infrequently narrowed to knowledge that is generated through scientific research. Scientific research, then, tends to be limited to randomized control trials, which are deemed "the only reliable way in which valid scientific knowledge about 'what works' can be generated" (Biesta, 2010, p. 494). The relatively few studies that have examined evidence use in educational practice—in jurisdictions other than the Netherlands and by actors other than school leaders— have indicated that evidence use is

48 In this study, evidence refers to both school data and research evidence (see Section 1.2.4).

not confined to academic research evidence or school data alone (e.g. Farley-Ripple, 2012; Honig & Coburn, 2008; Nijland et al., 2017).

Thus far in this dissertation, evidence has not yet emerged as an important factor in Dutch secondary school leaders' school intervention decisions. This fact is remarkable considering the intensified emphasis on evidence use and the initiatives intended to stimulate evidence use among Dutch practitioners. This chapter aims to shed further light on the use of evidence by Dutch secondary school leaders in their school intervention decision-making. The two research questions that guided this study are as follows:

1. Do school leaders use evidence in their school intervention decisions?
2. If school leaders do use evidence in their school intervention decisions, what kind of evidence do they use for this purpose?"

In an attempt to include all potential evidence sources that are currently used by Dutch school leaders, in this study, the researcher broadly defined evidence as all information sources that potentially inform decision-making. This definition hence includes school data, school action research, and research evidence alike. Research evidence, moreover, is not confined to academic research, but can derive from policy sources or knowledge brokers[49] as well. To combine large-scale data with illustrations of "ordinary events in natural settings" (Miles et al., 2014, p. 11), the researcher studied school leaders' evidence use by means of a mixed-methods approach. A questionnaire with open-response questions was used to collect large-scale data on school leaders' actual use and interpretation of evidence. A series of semi-structured interviews served to illustrate school leaders' evidence use in its local context (Miles et al., 2014).

The next section (5.2) outlines this study's methodological approach. The empirical findings from both the questionnaire and interviews are presented in Section 5.3 The chapter concludes with a summary and discussion of the findings (5.4). Additional key concepts that underlie this study—*school autonomy*, *school intervention*, and *school leader*—have been defined in Section 1.2. The relevant characteristics of Dutch secondary education have been elaborated in Section 1.3.

49 In this study, the term *knowledge broker* refers to people who work in third-party intermediary organizations whose job it is to transfer knowledge (i.e. evidence) among researchers, policy-makers, and practitioners. The term derives from the expression *research brokering organizations*, which are "third party, intermediary organizations whose active role between research producers and users is a catalyst for research use in education" (Cooper & Shewchuk, 2015, pp. 2-3).

5.2 Methodological approach

This study aims to generate further insight into the use of evidence by Dutch secondary school leaders in their school intervention decision-making. The two research questions were studied by means of a mixed-methods approach. A digital questionnaire was used to yield observations on evidence use from a large number and wide variety of school leaders. The broad definition of evidence required additional qualitative methods to study school leaders' actual use and interpretation of evidence in their decision-making practice. A questionnaire with an open-ended design and a series of semi-structured interviews both served this purpose. The individual methodological approaches of the digital questionnaire and the interviews, including the characteristics of both school leader samples, have been elaborated in the corresponding sections of Chapters 2 and 4, respectively (2.3 and 4.2). This section elaborates those elements of the mixed-methods approach that specifically concern the study of school leaders' evidence use via both the questionnaire (5.2.1) and the interviews (5.2.2).

5.2.1 Questionnaire

A mixed-methods instrument (questionnaire with open-response questions) was used to obtain large-scale data on school leaders' evidence use in their school intervention decision-making. The questionnaire started by asking school leaders to indicate per entered school intervention—both those pursued and those considered but not pursued—if they had used evidence[50] in their considerations regarding (not) pursuing the intervention. This question was accompanied by the following description of *evidence*:

> In this questionnaire, the notion of "evidence" is broadly interpreted. It includes, for example, scientific evidence, research that is produced by universities/academics, research that is carried out by external organizations such as consultancy firms and (national) expertise centers, research that is "translated" at seminars and in books and magazines, and the analysis and interpretation of data at the school level. This last form of action research can be carried out by teachers, staff members, school managers, and members of the school board.

After indicating per school intervention whether they had used evidence in their considerations, the school leaders were asked to list the consulted evidence source(s) for one of the entered school interventions. This intervention was randomly selected by the questionnaire software from the interventions for which the participant had reporting using evidence during the consideration stage. The number of evidence items school leaders

50 The Dutch term that was used in the questionnaire is "onderzoek." This term can be translated as both evidence and research. Because of the broad definition of the concept in this dissertation, "onderzoek" is translated as evidence. The inclusive interpretation of "onderzoek" was communicated to the respondents via a description of the term.

could enter was not limited. The open-ended character of the questions and the broad definition of the term evidence were both intended to solicit school leaders' actual practical interpretations and use of evidence, rather than a theoretical or desired interpretation imposed by the researcher. The two open-response questions collected 326 evidence sources for pursued interventions and 45 sources for interventions that had been considered but not pursued.

No suitable classification was found in the existing literature for categorizing the rich dataset. This outcome was largely due to the earlier observation that school data and (external) research evidence are seldom studied jointly. Various categorizations found in either of the traditions logically distinguish between many sub-sources within the studied evidence source (e.g. Demski & Racherbäumer, 2017). School leaders' answers to the open-ended questions, however, often did not provide sufficient information for such specific categorization. To enable a meaningful analysis of the rich input that followed from both the comprehensive definition of evidence and the open-ended questionnaire, the researcher decided to inductively derive useful categories from the dataset itself.

As a first step in this categorization process, each evidence source was grouped with thematically comparable evidence sources. Each of these categories was given a working title and working definition based on the characteristics of the assembled items. After all 371 items had been categorized accordingly, as a second step, all categories were critically analyzed regarding their mutually distinctive characters and their capacity to encompass the contributed evidence items. This analysis led to nine categories being merged into five categories and the subsequent adjustment of definitions. To illustrate this step, the two separate categories school data and school action research were merged into the single category "school data and action research" because the items often did not reveal whether they concerned the result (i.e., school data) or the research process itself (i.e., action research). For similar reasons, evidence from academic studies and support from academia were merged into one category. Following this merger, as a third step, all items were reviewed regarding their appropriateness for the revised categories based on the adjusted definitions. The fourth step involved the critical analysis of all items for their information value (i.e., assessing whether the information available for an item allowed for accurate categorization). The item research on learning efficiency, for example, was first categorized as an example of school data and action research because it was assumed that it concerned research executed at the school leader's school by members of that school. Upon second reading, the researcher realized that the item could equally apply to a peer-reviewed study about learning efficiency or to research executed at the school itself but by knowledge brokers without the involvement of staff members. Because the item itself did not provide definite information, it was categorized as "unidentified evidence," which

was added as a sixth category. Other items such as "theoretical examples," "study books," "national reports," and "conversations with people across the country" provided even less information. All such items were categorized as unidentified evidence.

Table 5.1 presents the six categories that resulted from the inductive categorization process. Each evidence source is accompanied by a definition and illustrated by various examples provided by the school leaders in the questionnaire.

Evidence source	Definition	Examples of sources used by school leaders
School data and action research	Evidence, both quantitative and qualitative, concerning one's own school that derives from collection and/or analysis by school staff	Analysis of assessment data, school-based study on student motivation, research by teacher following master program, lesson visits by colleagues, student outcomes from previous years
Evidence from other schools	Evidence that derives from other schools' (good) practices and data	Experiences from schools that have gone further in introducing laptop classes, practitioner research from another school, participation in network with other schools, practical examples
Academic evidence	Evidence, including support, that derives from academia	Scientific literature, studies by [name of academic researcher], evidence from an academic master's program, [name of Dutch university], participation in a research community
Evidence from knowledge brokers	Evidence, including support, that derives from (people working in) intermediary knowledge-brokering organizations	Information from [name of national intermediary organization], study on our school identity by a communication agency, book by [name of educational consultant], coaching by consultancy organization
Policy evidence	Evidence, including support, that derives from (people working in) policy organizations	Assessment results of the Inspectorate of Education, study by the Education Council, conversations with responsible municipal officers and alderpersons, report from Association of Schools in Secondary Education
Unidentified evidence	Evidence items without distinctive information allowing for categorization in any of the other evidence source categories	Theoretical examples, study books, national reports, conversations with people across the country

Table 5.1: Evidence sources, including definitions and examples from school leaders' input in the digital questionnaire. The presented examples are not limitative.

The first five categories of evidence sources were also applied in the analysis and presentation of the interview findings. The questionnaire design, distribution, and responses have been elaborated in the methodological approach section of Chapter 2 (2.3).

5.2.2 Interviews

Along with the questionnaire input from nearly 200 school leaders, the 10 semi-structured interviews with school leaders provided illustrations of their depictions and use of evidence

in their school intervention decision-making. As elaborated in the previous chapter, the interviews focused on school leaders' beliefs about their school leadership and the motives behind their school intervention decisions. To avoid a potential social desirability bias, the researcher did not ask any direct questions about the role of evidence in the decision-making process. The researcher believed that if evidence had indeed influenced the school leaders' intervention decisions, it would manifest itself in their accounts of their considerations. To ensure that the topic would not be overlooked, the researcher included various evidence-related factors in the list of 59 factors that potentially affect school intervention decisions.[51] For the factors that were not mentioned in the interviews, the factor list scores either confirmed that these factors were considered of little to no importance or revealed that they in fact had had a noteworthy influence. The latter case provided opportunities for follow-up questions.

As a first step in the analysis of the interview data, evidence use was defined as the analytical unit (Creswell & Plano Clark, 2011) for first cycle coding (Miles et al., 2014). The second step involved paraphrasing all coded interview passages from the transcripts. To facilitate later reviewing, all paraphrases were accompanied by the corresponding page number in the transcript. As a third step, all paraphrases were deductively categorized by means of the evidence sources elaborated in Section 5.2.1. These categories served as pattern codes during second cycle coding (Miles et al., 2014). During this coding process, notes were added for any reflection related to the pattern codes. As a fourth and final step, all interviews were reread and searched for missing or disconfirming evidence (Creswell & Plano Clark, 2011). This procedure was undertaken to increase the reliability of the coding.

5.3 Findings

This section presents the empirical findings concerning school leaders' evidence use in their school intervention decision-making. The findings from the questionnaire are presented first (5.3.1), followed by the findings from the interviews (5.3.2).

5.3.1 School leaders' evidence use in school intervention decision-making: findings from the questionnaire

After listing the school interventions they had either pursued or considered but not pursued, the school leaders were asked to indicate per intervention whether they had used evidence in their considerations whether to pursue the intervention in question. These findings are presented in Section 5.3.1.1. The findings concerning the used evidence sources are presented next in Section 5.3.1.2.

51 The characteristics of the factor list have been presented in the methodological approach section of Chapter 4 (4.2.3).

5.3.1.1 Evidence use per school leader and per school intervention (sub)domain

For the distribution of evidence use, both school leaders and school interventions can be taken as reference points. Taking the school leaders as the point of reference, 176 of the 196 responding school leaders (89.8%) indicated that they used evidence in their considerations about pursuing one or more of their interventions. Of the 79 school leaders who indicated that they had considered an intervention but refrained from pursuing it, 30 used evidence in their considerations (38.0%).[52] Figure 5.1 visualizes evidence use per school leader—for both pursued and not-pursued interventions—based on the question "Did you use evidence as part of your decision to (not) take the intervention forward?" Regression analyses of the dependent variable "evidence use per school leader" and the independent variable "years of school leader experience" (the only available school leader variable) did not yield any significant outcomes regarding the pursued interventions. The number of school leaders using evidence regarding the not-pursued interventions (79) was too low for meaningful regression outcomes.

Taking the school interventions as the reference point for evidence use, the school leaders indicated reporting using evidence in the decision-making process for 72.1% of the 595 pursued interventions and 32.9% of the 140 non-pursued interventions. Figure 5.2 illustrates evidence use per school intervention—both pursued and not pursued—based on the same question: "Did you use evidence as part of your decision to (not) take the intervention forward?"

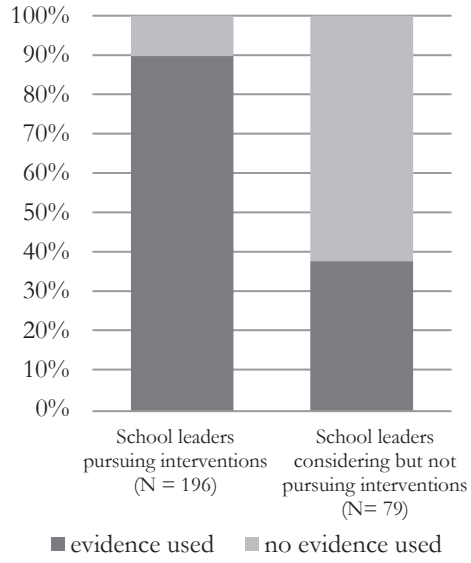


Figure 5.1: Evidence use per school leader.

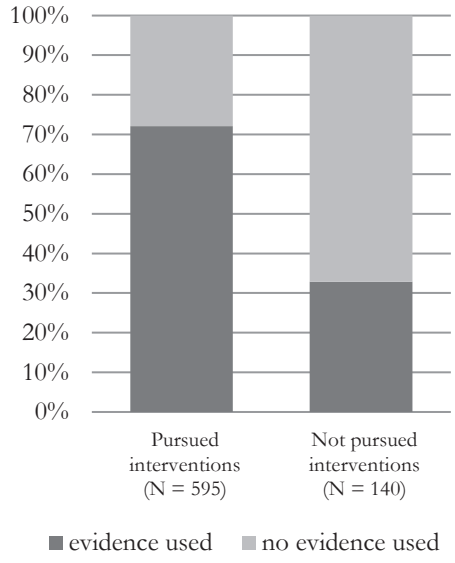


Figure 5.2: Evidence use per school intervention.

52 All of these 30 school leaders were among the 176 evidence users for the pursued interventions.

Figure 5.3 illustrates that there were no large differences in evidence use across the three main school intervention domains of the classification scheme introduced in Chapter 2. Evidence was used least frequently in decisions concerning organizational interventions (67%), more frequently in relation to educational interventions (73%), and most frequently in relation to staff interventions (76%). Although evidence was used far less often in decisions for not-pursued interventions, Figure 5.4 shows that the distribution of evidence use across the three main domains matches that for the pursued interventions.

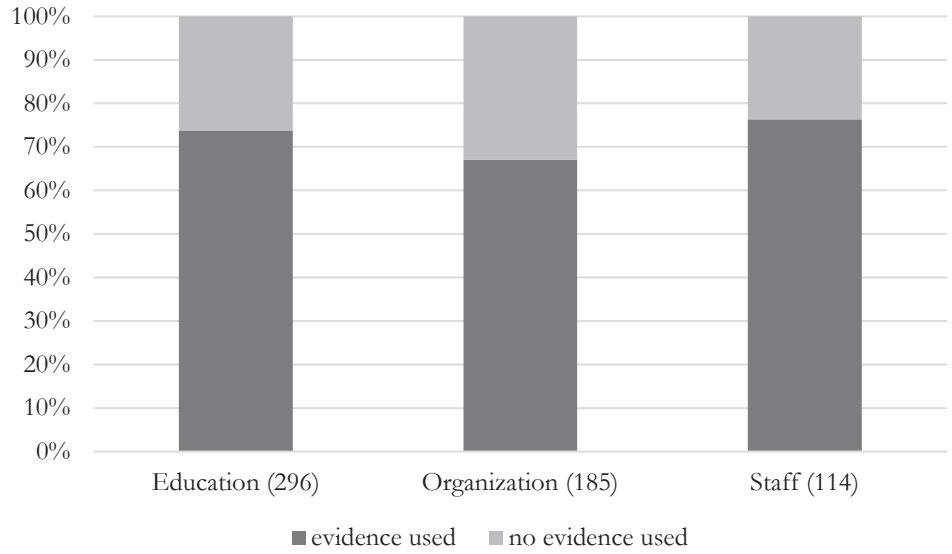


Figure 5.3: Evidence use concerning the pursued school interventions per intervention domain. The number of interventions per domain is indicated in parentheses.

Regression analyses of the dependent variable "evidence use per pursued school intervention" and the independent variable "school intervention domain" did not produce any significant outcomes. The three different domains featured too few not-pursued school interventions for meaningful regression outcomes.

Distributing school leaders' evidence use across the classification's 16 school intervention subdomains revealed noteworthy differences across various subdomains, as displayed in Figure 5.5.

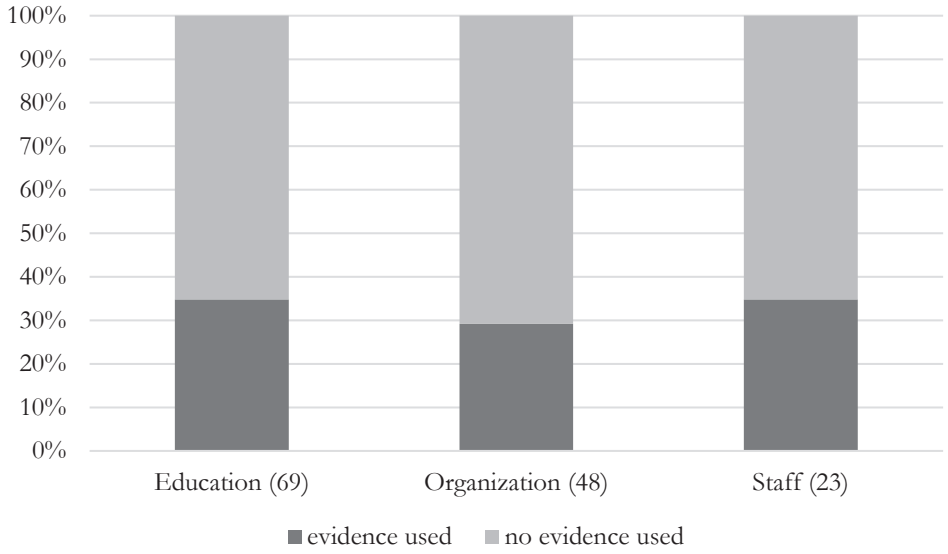


Figure 5.4: Evidence use concerning the not pursued school interventions per intervention domain. The number of interventions per domain is indicated in parentheses.

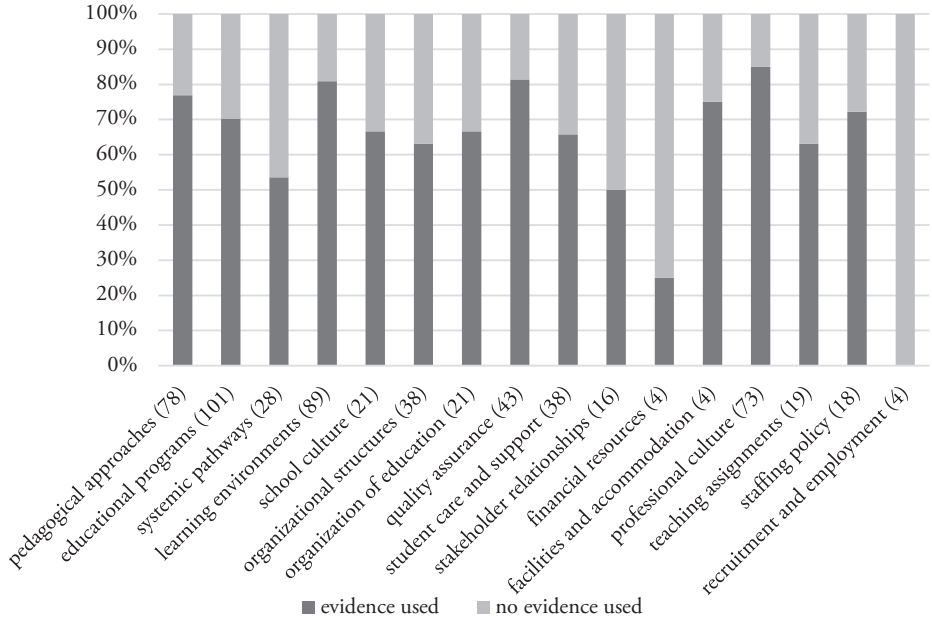


Figure 5.5: Evidence use per pursued school intervention subdomain. The number of interventions per subdomain is indicated in parentheses.

For five subdomains, evidence use at least equaled the average use rate of 72%.[53] These subdomains, listed in order from high to low evidence use, are professional culture (85%), learning environments (81%), quality assurance (81%), pedagogical approaches (77%), and staffing policy (72%). At the other extreme are two subdomains in which evidence was used in less than 55% of all deliberation processes: stakeholder relationships (50%) and systemic pathways (54%). The remaining six subdomains had evidence use rates between 63% and 70%: educational programs (70%), school culture (67%), organization of education (67%), student care and support (66%), organizational structures (63%), and teaching assignments (63%). Though the various subdomains showed quite noticeable differences regarding school leaders' evidence use, when corrected for the number of interventions per subdomain, the regression analyses yielded no statistical differences.

Figure 5.6 shows the distribution of the 140 interventions that were considered but not pursued across the 16 subdomains.

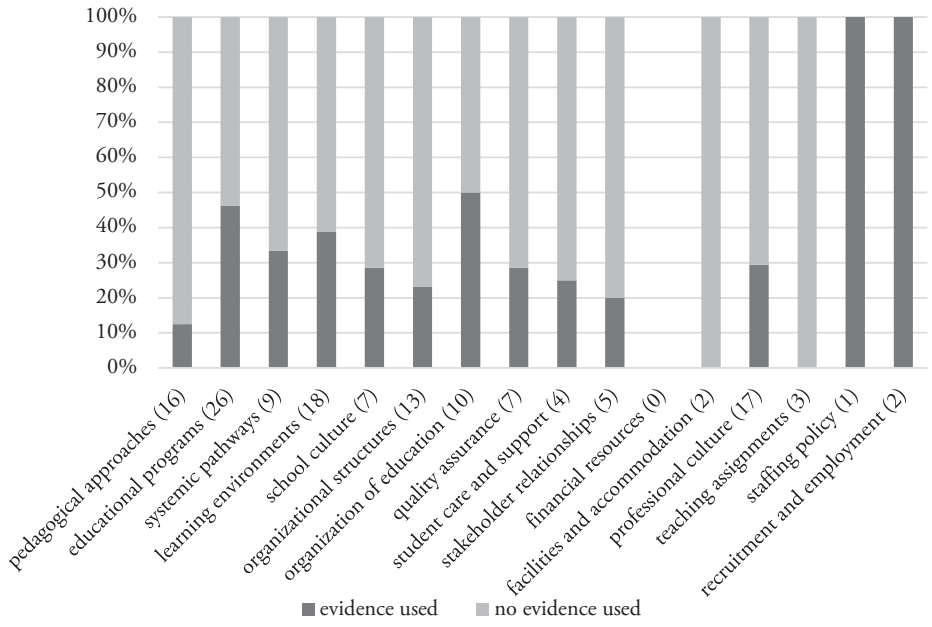


Figure 5.6: Evidence use per not pursued school intervention subdomain. The number of interventions per subdomain is indicated in parentheses.

53 The three subdomains that consist of only four interventions each were not included in the following analysis. These are the subdomains financial resources, facilities and accommodation, and recruitment and employment.

When interpreting Figure 5.6's distribution, one must take the small number of interventions in the majority of the subdomains into consideration. Only six subdomains include 10 or more interventions. Analyzing these six subdomains, the researcher found the relatively high evidence use in deliberations regarding the organization of education (50%) and educational programs (46%) particularly notable. In the distribution of pursued interventions, both subdomains scored below the average evidence use rate. The only other subdomain that comprises more than 10 interventions and had an above-average evidence use rate is learning environments (39%). At the other extreme, the very low evidence use rate for deliberations related to pedagogical approaches (13%) is striking, all the more so when compared to the 77% evidence use rate for the pursued pedagogical interventions. Findings were similar for the subdomain professional culture. Among the pursued interventions, this was the subdomain with the highest evidence use (85%). Among the not-pursued interventions, the 29% evidence use rate was below average. Again, the high number of subdomains (16) relative to the low number of not-pursued school interventions (140) did not allow for meaningful regression analyses.

The previously mentioned findings led to three main observations concerning school leaders' evidence use in school intervention decision-making according to their questionnaire responses:

1. The large majority of school leaders (89%) indicated having used evidence in their considerations regarding one or more pursued school interventions. When the pursued school intervention rather than the school leader is taken as the reference point for evidence use, the drop to 72% demonstrates that school leaders did not use evidence in all of their considerations. The evidence use rate for interventions that were considered but not pursued was considerably lower than that for pursued interventions: 38% of the school leaders used evidence in connection to only 33% of the not-pursued interventions.

2. There were no large differences in evidence use across the three main school intervention domains of education, organization, and staff. The distributions of evidence use for the pursued and the not-pursued interventions exhibited a similar pattern across the three domains.

3. For the pursued interventions, four subdomains had above-average evidence use rates. These subdomains were professional culture, learning environments, quality assurance, and pedagogical approaches. Two subdomains had evidence use rates below 50%: stakeholder relationships and systemic pathways. Though much lower in terms of both overall frequency and evidence use, the not-pursued

interventions had different high- and low-scoring subdomains for evidence use. Organization of education and educational programs scored above average, while pedagogical approaches had a noticeably low score, especially when compared to its high score for pursued interventions.

5.3.1.2 Evidence sources used in school intervention decision-making

After the school leaders were asked whether they had used evidence in their considerations about whether to pursue an intervention, those 176 school leaders who reported using evidence were asked to list what evidence source(s) they had used for one of their—randomly selected—school interventions. As explained in the methodological approach section (5.2), this question was asked in an open-ended manner and accompanied by a broad definition of the term evidence. The number of evidence items school leaders could enter was not limited. Concerning the pursued interventions, this question generated 326 items from 169 school leaders[54] (μ 1.9 per school leader), and for the interventions that were considered but not pursued, 45 items were entered by 30 school leaders (μ 1.5 per school leader).

All items were categorized into one of the six categories of evidence sources defined and exemplified in Section 5.2:

- School data and action research
- Evidence from other schools
- Academic evidence
- Evidence from knowledge brokers
- Policy evidence
- Unidentified evidence

Before presenting the distribution of evidence sources, the chapter first notes the broad definition and open-ended questions were conceived by many school leaders as an invitation to provide correspondingly general answers. Whereas some school leaders were both detailed and concrete in their answers, many school leaders provided answers that either left room for interpretation (these items were labelled as unidentified evidence) or showed a remarkably liberal interpretation of the already broad definition. For example, school leaders listed, and thus considered as evidence, the following sources: "conversations with people in the country," "conversations with local authorities," "conversations with staff members," "consultations outside our school," "participation in network," and "my books." A questionnaire, unfortunately, does not allow for

54 Seven school leaders who indicated that they had used evidence did not respond to this follow-up question. This might indicate that on further consideration, these school leaders realized that they had not used evidence in their

additional follow-up questions, which could have determined the potential content and scope of these items. These items did, along with many items that did provide more detailed information, hint at a rather liberal interpretation and use of evidence in school intervention decision-making.

The categorization of the 326 evidence items for pursued interventions across the six evidence sources led to the distribution displayed in Figure 5.7.

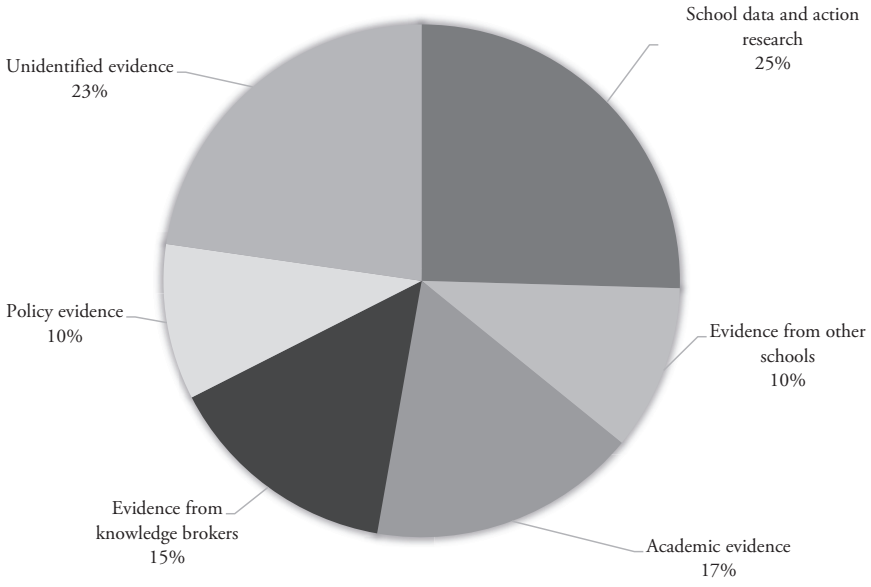


Figure 5.7: Distribution of evidence sources used by school leaders in their deliberations regarding pursued interventions (N = 326).

Figure 5.7 indicates that the most popular evidence source among school leaders when considering school interventions that were later pursued was school data and action research; a quarter of all entered evidence items represent a variant of this evidence source. Academic evidence was the second most popular evidence source (17%), closely followed by evidence from knowledge brokers (15%). Evidence from other schools and policy evidence were the least frequently used sources: each evidence source accounts for 10% of all evidence items. A substantial 23% of all items did not provide enough information for meaningful categorization. The two evidence sources that directly

considerations. If this were true, the previously presented percentages for evidence use per school leader and per school intervention are slight overestimates.

involved practitioners—"school data and action research" and "evidence from other schools"—together represent 35% of all reported evidence items.

The same question was asked for the interventions that were considered, but not pursued. This question led to a mere 45 items, entered by 30 school leaders (μ 1.5 per school leader). These 45 evidence items were distributed as follows:

Figure 5.8 demonstrates an even greater dominance of school data and action research as the preferred evidence source than does Figure 5.7: 33% of all evidence items considered in deliberations regarding not-pursued interventions were a variant of school data and action research. This source was followed at quite some distance by evidence from other schools (18%). This source had an 8% higher use rate for not-pursued interventions than pursued interventions.

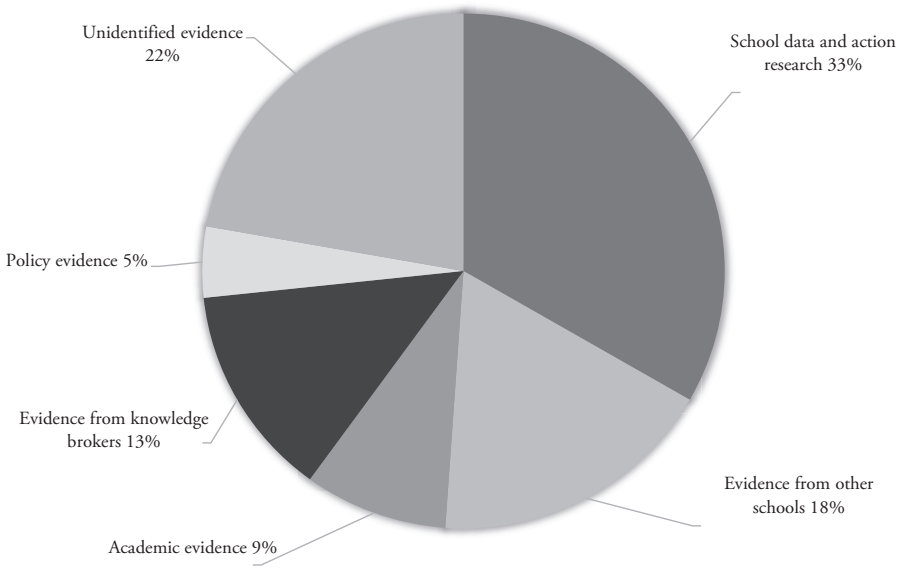


Figure 5.8: Distribution of evidence sources used by school leaders in their deliberations regarding considered but not pursued interventions (N = 45).

Thirteen percent of all items concerned evidence from knowledge brokers; this figure approximates the 15% coverage for pursued interventions. Academic evidence represents only 9% of all evidence items, a figure almost half that for pursued interventions. The same pattern held for policy evidence: While this category accounted for 10% of evidence use for pursued interventions, it encompassed only 5% of evidence use for not-pursued interventions. The percentage of unidentified evidence was virtually equal for pursued and not-pursued interventions. Among the not-pursued interventions, "school data and action research" and "evidence from other schools" together account for 51% of all reported evidence items, which is a considerably larger share than that seen for pursued interventions (35%).

The mean scores of 1.9 and 1.5 items per school leader for pursued and not-pursued interventions, respectively, indicate that the school leaders often used more than one evidence source in their considerations. As noted in the introduction, school data and research evidence are often approached and studied separately. Consequently, little is known about the extent to which practitioners use combinations of evidence sources in their daily practice.

This study's broad definition of evidence and the indefinite answer options offer insight into potential combinations of evidence sources that school leaders use in their school intervention decision-making.

Table 5.2 shows all reports of the six evidence sources, from single reports of an individual evidence source to combinations of up to four different sources. Whereas Figure 5.7 displays the distribution of all 326 individual evidence items, Table 5.2 only displays the combinations of distinct evidence sources for each of the 169 pursued interventions. To illustrate this, when one school intervention was supported by three academic evidence items and one policy evidence item, in Figure 5.7, this adds up to four items. In Table 5.2, these four items are represented by the combination of two evidence sources, namely academic evidence and policy evidence. Table 5.2 hence does not take the number of similar evidence sources per school intervention into account.

	SA	OS	AC	KB	PO	UN	#	%
1 evidence source	■						34	20,12
						■	27	15,98
				■			17	10,06
			■				12	7,1
					■		3	1,78
		■					1	0,59
subtotal							***94***	***55,62***
	SA	**OS**	**AC**	**KB**	**PO**	**UN**		
2 evidence sources	■				■		10	5,92
		■				■	9	5,33
	■	■					5	2,96
			■		■		5	2,96
	■		■				3	1,78
	■					■	3	1,78
			■			■	3	1,78
				■	■		3	1,78
				■		■	3	1,78
	■			■			2	1,18
			■	■			2	1,18
		■	■				1	0,59
		■		■			1	0,59
		■			■		1	0,59
subtotal							***51***	***30,18***
	SA	**OS**	**AC**	**KB**	**PO**	**UN**		
3 evidence sources	■		■		■		3	1,78
		■	■			■	3	1,78
	■	■		■			2	1,18
	■		■			■	2	1,18
		■		■		■	2	1,18
			■	■		■	2	1,18
	■		■	■			1	0,59
	■			■		■	1	0,59
		■	■		■		1	0,59
		■			■	■	1	0,59
subtotal							***18***	***10,65***
	SA	**OS**	**AC**	**KB**	**PO**	**UN**		
4 evidence sources	■	■		■		■	2	1,18
	■	■	■	■			1	1,18
	■		■		■	■	1	0,59
	■			■	■	■	1	0,59
		■	■	■		■	1	0,59
subtotal							***6***	***3,55***
total							**169**	**100,00**

Table 5.2: Combinations of evidence sources used by school leaders in their decision-making about the pursued interventions (N = 169). SA = school data and action research | OS = evidence from other schools | AC = academic evidence | KB = evidence from knowledge brokers | PO = policy evidence | US = unidentified evidence.

Table 5.2 clearly indicates that combinations of different evidence sources were very frequent: In nearly 45% of all pursued school intervention deliberation processes, school leaders used two or more evidence sources. In making nearly 15% of all school intervention decisions, they used three or more sources. Zooming in on the different evidence sources, one notes that evidence from other schools and policy evidence were rarely reported as single sources. Policy evidence was often accompanied by school data and action research, whereas evidence from other schools was frequently combined with an unidentified evidence source. "School data and action research" and "evidence from knowledge brokers," on the other hand, were cited relatively frequently as single evidence sources. Academic evidence was regularly used as an only source but more often employed in combination with one or more other evidence sources, although no particular source stood out.

Table 5.3 simplifies Table 5.2's distribution into individual and combined use of the various evidence sources, which underlines the above-mentioned observations.[55]

Evidence source	Individual use	Combined use
School data and action research	20.1%	21.9%
Evidence from other schools	0.6%	17.7%
Academic evidence	7.1%	16.0%
Evidence from knowledge brokers	10.1%	14.2%
Policy evidence	1.8%	16.0%
Unidentified evidence	15.4%	20.1%

Table 5.3: Individual and combined use of evidence sources by school leaders in their decision-making about the pursued interventions (N = 169).

The above findings led to four main observations concerning the evidence sources used by school leaders in school intervention decision-making according to their questionnaire responses:

1. School data and action research was the school leaders' preferred evidence source in their school intervention decision-making concerning both pursued and not-pursued interventions. It was used both as a single source and in combination with other evidence sources.

2. Practitioner-oriented evidence—"school data and action research" and "evidence from other schools"—was more frequently used in relation to not-pursued interventions; academic evidence and policy evidence were more often employed for pursued interventions.

55 Because of the low number of evidence sources for not-pursued interventions, combinations of evidence sources are only presented for pursued interventions.

3. Though the use of individual evidence sources was dominant, combinations of two or more evidence sources were also frequent. Evidence from other schools and policy evidence rarely occurred as single sources.

4. Many items showed a remarkably liberal interpretation of evidence in school intervention decision-making.

5.3.2 School leaders' evidence use in school intervention decision-making: findings from the interviews

The interview findings about the school leaders' evidence use in their school intervention decision-making are structured in five sections (5.3.2.1–5.3.2.5) following the evidence sources[56] introduced in the methodological approach section (5.2). A brief recapitulation of the interview findings concludes this section (5.3.2.6). In the interviews, the school leaders' decision-making was approached (1) in relation to their pursuing a specific differentiation intervention and (2) in relation to their school intervention decisions in general.[57] Whenever school leaders' accounts of evidence use related specifically to the differentiation intervention and not to their school intervention decisions in general, this is indicated. When interpreting the interview findings, one must realize that no direct questions were asked about the role of evidence in school leaders' decision-making processes. All references to evidence use were hence self-initiated by the school leaders. This factor, in combination with the relatively small sample of 10 school leaders, impedes irrefutable conclusions.

The interview findings are qualitatively presented and are hence not accompanied by quantifications. The extent to which the school leaders mentioned the different evidence sources in relation to their school intervention decision-making without prompting does, however, provide additional insight into their evidence use. Therefore, Tables 5.4 and 5.5 illustrate evidence use per evidence source and per school leader for the specific differentiation intervention and school intervention decisions in general, respectively.

56 As all evidence items that appeared in the interviews could be identified, the category "unidentified evidence" does not feature in the presentation of the interview findings.

57 This approach has been elaborated in Chapter 4's methodological approach section (4.2).

Differentiation intervention	School leader #									
	1	2	3	4	5	6	7	8	9	10
School data and action research										
Evidence from other schools										
Academic evidence										
Evidence from knowledge brokers										
Policy evidence										

Table 5.4: Evidence use in the decision-making process per evidence source and per school leader for the differentiation intervention.

School intervention decisions in general	School leader #									
	1	2	3	4	5	6	7	8	9	10
School data and action research										
Evidence from other schools										
Academic evidence										
Evidence from knowledge brokers										
Policy evidence										

Table 5.5: Evidence use in the decision-making process per evidence source and per school leader for school intervention decisions in general.

	Use		Little use		No use (explicit)		Not mentioned

5.3.2.1 School data and action research

Various school leaders indicated that they, to a greater or lesser extent, used school data in their school intervention decision-making in general. None of these school leaders, however, specified what kind of school data they were referring to. None of the school leaders mentioned school data when discussing the motives behind their decision to pursue the specific differentiation intervention.[58]

The school leaders shared various illustrations of action research. Some cited the "inquisitive culture" at their schools and the presence of teacher-researchers. Others made explicit that they put much effort into the professionalization of their teachers by encouraging and facilitating the uptake of master's programs. These school leaders believed that an increase in academically trained teachers would stimulate evidence use and school development throughout their schools via the institutionalization of professional learning communities.

58 The mean score for the factor "school data" from the factor list was 2.4 for the differentiation intervention and 2.8 for school interventions in general. On a scale from 1–4 (1 = no influence | 2 = small influence | 3= big influence | 4 = essential influence), these scores indicate a moderate to considerable influence of school data on school leaders' decisions to pursue school interventions. This influence was not so evident in the interview conversations.

> We invest a lot in training and offering [professional] space. People had to learn to see things from a national perspective. And that is getting better via professional learning communities and teachers who follow [academic] courses. (SL4)

One school leader worked at an academic training school.[59] He acknowledged, however, that despite the alleged features of an academic training school, the actual use of evidence at his school was limited and hard to institutionalize. In response to a question about the reach of evidence use in school practice, he replied

> Well, too small, too small. As an academic training school, we said—five years ago—that each team required a teacher-researcher to guide [teacher training and] student research and that students who do their internship at [name of school] have to research a question generated by the team in which they work. Well, that is so hard. As a school, it is extremely difficult to control the cluster of teacher training institutes. For many years, I put a lot of staff into this. So, in each team we had a teacher-researcher and a number of these master's students. And then we had students who did research based on a question that had come up from the team. But, well, these students sometimes had different interests and wanted to do something with geography didactics rather than differentiation in one of our school tracks. And then that school track wanted research into differentiation in that school track, and then there were no students to match that research question. . . . All in all, it is really very arduous. (SL8)

On the one hand, various school leaders enthusiastically recounted the various initiatives they had undertaken to increase action research at their schools, which indirectly relates to their school intervention decision-making. At the same time, they acknowledged the difficulties of utilizing these initiatives to make a real impact and drive sustained change toward a more investigative, evidence-informed school culture. In this respect, one school leader expressed his wish for the investigative culture at his school—which he defined as "asking questions"—to increase.

Regarding the specific differentiation intervention, only one school leader referred to action research in the decision-making process. This school leader conducted action research with his team to connect the identified school problem to intervention ideas that he had learned about at an international educational conference with speakers from both intermediary (profit) organizations and academia.

59 An academic training school is a partnership of one or more teacher training institutes and various (primary, secondary, or vocational tertiary) schools that combines their educational function with a strong focus on practice-oriented research and innovation. In these partnerships, (future) teachers learn to develop research skills to improve their teaching practices (Ros, Steen van der, & Timmermans, 2016).

> [After returning from the conference,] we started a session with the whole team on a voluntary basis—we asked them, "Who wants to think along?"— and then we asked some questions about what we think is good education. . . . And then really great ideas came forward, which we elaborated. And then I also sought a theoretical basis that could give direction to that jumble of good ideas. And that brought me to [name of international educator, author, and businessperson with a background in academia]. (SL5)

5.3.2.2 Evidence from other schools

Evidence from other schools was mentioned by various school leaders as sources of inspiration and support for their decision to pursue the specific differentiation intervention. As one school leader recounted

> Well, of course, it was a time when many schools tried something similar, so you see and hear it around you. It is kind of, well, it comes along. So, then you think, let's consider this too. (SL10)

Another school leader, after explaining several reasons that he was looking for an additional and distinctive profile for his school, said

> Well, those are all reasons why we said, "Why don't we look around at other schools?". . . So, then we went to [name of colleague] and looked around at that school, and we spoke with teachers there, and students, and the school's management team. Well, then we had a certain image of [the differentiation intervention], and we said, "That is worth investigating." I was trained to evidence-informed leadership. So, then we decided to join the network of schools [around that specific differentiation intervention] just to see whether [that intervention] fit our ideas. So then, last summer we invited [name of external advisor working for the network of schools]. [He] came here and gave a presentation. And then we finally said, "Okay, let's join the network for at least a year to see whether this [intervention] is something for us". . . .You try to take the best of various schools. You actually learn the most from that. (SL2)

It is notable that for this school leader, evidence-informed leadership equaled visiting one school that had already implemented the intervention under consideration and discussing the intervention with an external advisor appointed by an intermediary organization to organize and expand the network of schools involved with that particular differentiation intervention. Though he defined himself as an evidence-informed school

leader, in his accounts concerning the decision to pursue the differentiation intervention, this participant made no references to the use of either school data or academic evidence.

The interviewed school leaders made no additional mentions of the use of evidence from other schools regarding their school intervention decisions in general.[60]

5.3.2.3 Academic evidence

Only 1 of the 10 interviewed school leaders explicitly reported using academic evidence in his decision-making concerning the specific differentiation intervention. After an analysis of "a problem that was experienced by teachers," this school leader—working at times with other members of the school team—engaged in a conceptual exploration of various evidence sources before deciding on an intervention to pursue to tackle the identified problem. These sources included academic studies and an international study trip including an educational conference. His exploration of academic evidence use was triggered by a personal encounter with academic evidence at a conference.

Half of all interviewed school leaders explicitly indicated that they had not used any academic evidence in their deliberations regarding the pursued differentiation intervention. One school leader illustrated his view of academic evidence as follows:

> It is about *my* estimation at *my* school with *my* students. I am totally not interested [in the scientific basis for the differentiation intervention that was offered by an external advisor]; I don't want that. My first action in my own company [professional occupation before becoming a school leader] was to throw out all economists, all scientists, and to forbid science. It only bothers you. It does not bring you anything. (SL4)

Another school leader who did not use academic evidence did refer to an academic study, namely, Hattie's *Visible Learning*:

> I wonder whether Hattie, with his view on things and what works, chooses a traditional paradigm as a starting point—namely, the paradigm in which it is the teacher's prime role to first and foremost teach collectively, where the teacher sends and the children receive. . . . I believe that this is the starting point of his mindset. In that case, it is questionable whether the measures he defines—what works more,

60 The mean score of the factor "good practices of other secondary school(s)" from the factor list was 2.7 for the differentiation intervention and 2.6 for school interventions in general. These scores indicate a considerable influence of others' good practices on school leaders' decisions to pursue school interventions. The former score underlines the observations from the interviews concerning the differentiation interventions. The latter score indicates that good practices at other secondary schools influenced both school intervention decision-making in general and the specific differentiation intervention decisions to approximately the same degree.

> what is really relevant, and what is less—remain the same when you choose a different paradigm, namely, the paradigm of [the differentiation intervention], in which the student is the sender and the teacher the receiver. Not necessarily black-white, zero-one hundred, but it is the base camp of your didactic approach. (SL1)

The above quotation demonstrates that even though this school leader did not use Hattie's *Visible Learning* in his decision-making about the differentiation intervention, he was familiar it. He did not mention any other academic sources to substantiate his decision to pursue the differentiation intervention.

The other school leaders did not make any allusions to the use of academic evidence in relation to their decision about their particular differentiation intervention. Two school leaders did indicate that at the time of the interview, they were looking for academic evidence to support the implementation of the intervention. In both cases, however, the decision to pursue the specific differentiation intervention had already been made.

Across the 10 interviews, the above findings indicate a negligible to non-existent role of academic evidence in the majority of the school leaders' differentiation intervention deliberation processes. Regarding their school intervention decisions in general, the direct use of academic evidence can also be considered fairly limited—an observation that was even expressed as such by many of the school leaders themselves. The reasons behind this limited use, however, varied.

Half of all the interviewed school leaders demonstrated outright skepticism toward academic evidence. These school leaders argued (1) that the assumptions or focus of those academic studies with which they were familiar did not match their school practices, ambitions, or needs (e.g., SL1's interpretation of Hattie's *Visible Learning*); (2) that one can always pick a study that best suits a decision that has already been made; and (3) that one's own moral judgement is more valuable than academic evidence.One of these school leaders additionally expressed that he found himself insufficiently scientifically trained. This school leader also stressed problems with access to academic evidence:

> The gap between academic research and educational practice is, well, gigantic, of course. I mean, what [Dutch] educational researcher's study is published in Canada? And, we as a school cannot access that. As a school, I cannot even access a scientific library. I cannot even afford that as a school. But in each team, I have one or two people who follow a master's program. And I agreed with my school management team that in the end, everybody finishes a master's program. Then I have a lot of people who follow an academic course of study, and through them you suddenly do have access to that scientific library. (SL8)

Whereas these school leaders, despite their skepticism and the obstacles they experienced, exhibited familiarity with academic studies,[61] other school leaders— including one alumnus of a master's program on evidence-informed leadership —made no references at all to either their personal use of or their opinions about academic evidence.

Concerning school intervention decision-making in general, again, only one school leader referred to the actual use of academic evidence. This was the same school leaders who was quoted in relation to the differentiation intervention and who used school action research during his decision-making process.

5.3.2.4 Evidence from knowledge brokers

Various school leaders mentioned evidence or support from knowledge brokers in the decision-making phase for either the differentiation intervention or school interventions in general. In all cases, this evidence and/or support derived from an external advisor or consultant working for an educational support or consultancy (profit) organization. As one school leader recounted

> Well, there are [names of two knowledge brokers] and others who provide evidence that can benefit schools. And they monitor—which is also a form of research, of course—what happens at the schools [that participate in the network around the specific differentiation intervention] and try to discover patterns in that.[62] (SL3)

These intermediary organizations have no direct connections to either academia or policy. The interviews left largely unclear what kind of evidence sources knowledge brokers themselves rely on; only one school leader emphasized the academic background of one of his advisors. In this respect, it should be noted that the advisors referred to in the above quotation were not neutral advisors in the sense that they analyzed and defined this school's current and desired situation and then recommended possible interventions to realize the desired outcome on that basis. Instead, these advisors were appointed by an intermediary organization with only one aim: to organize and expand the network of schools involved in that particular differentiation intervention. As such, they specifically promoted one differentiation intervention. In turn, this does not say anything about the evidence that may or may not have supported that intervention. In all cases, the support from knowledge brokers continued from the decision-making phase of the intervention to the implementation phase.

61 The extent of this familiarity was not an interview topic. In other words, the interviews did not explore whether the school leaders had actually read and analyzed the mentioned studies or whether they formed their opinions based on hearsay.

62 The monitoring activities did not concern the decision-making phase of the intervention, but rather the implementation phase.

5.3.2.5 Policy evidence

No references were made to evidence or support from policy sources in the decision-making phase for either the differentiation intervention or school interventions in general.[63]

5.3.2.6 Summary

The above findings lead to six main observations concerning the evidence sources used by school leaders in school intervention decision-making according to the interviews:

1. Evidence use is highly dependent on personal relationships. Rather than referring to written evidence sources, school leaders used evidence that originated from personalized sources such as professional learning networks, teachers enrolled in master's programs, external advisors, and good practices at other schools. Even the single reported use of academic evidence was triggered by personal encounters at an educational conference.

2. The interviews pointed to a rather modest use of school data and action research. The school leaders' accounts indicated that data use was not a routine element of their decision-making processes. Their accounts of action research were more frequent. However, although some school leaders delegated data and/or action research responsibilities to team members, their accounts did not make clear if and how these initiatives concretely affected their school intervention decision-making.

3. Evidence from other schools—often referred to in the interviews as "good practices"—appeared quite frequently in the interviews. Half of all interviewed school leaders cited good practices at other schools as sources of inspiration for the decision to pursue the specific differentiation intervention.

4. Only one school leader used academic evidence in his consideration regarding the differentiation intervention, whereas half of all interviewed school leaders demonstrated an outright skepticism toward academic evidence. The reasons for their skepticism ranged from claims that in their experience, academic studies did

63 The factor list items "national benchmarks" and "international benchmarks" can largely be taken as possible policy evidence, as three benchmarks with a potentially wide reach among Dutch school leaders are initiated by policy organizations. Both the Dutch Association of Schools in Secondary Education and the Dutch Inspectorate of Education websites offer open-access data and secondary school benchmarks. The website "schools on the map" (Association of Schools in Secondary Education, 2018) enables comparisons among schools for a large variety of quality, identity, and organizational factors. The website of the Dutch Inspectorate of Education (2018a) hosts reports and quality assessments of individual schools. From an international perspective, various studies with international benchmarks at the student, teacher, school (leader), and system levels derive from the OECD's

not parallel their school practice, to the availability of—often contradictory—academic evidence to support almost any intervention, to the perception that their own moral judgements were more valuable than academic evidence.

5. Various school leaders described the provision of evidence or support by knowledge brokers, especially concerning the differentiation intervention. In all cases, this form of support continued from the decision-making phase to the implementation phase. The interviews did not clarify what kinds of evidence sources this support was in turn based on. These sources could hence include academic or school data.

6. Policy sources were absent in the interviews.

5.4 Conclusions and discussion

This chapter has aimed to shed light on the use of evidence by Dutch secondary school leaders in their school intervention decision-making. Two research questions guided this study. The first asked if school leaders use evidence in their school intervention decisions; the second concerned the type of evidence in question. The research questions were explored via a multi-methods approach that combined observations on evidence use from a large number and wide variety of school leaders with illustrations of school leaders' actual use and interpretation of evidence in their decision-making practice. In an attempt to include all potential evidence sources that are currently used by Dutch school leaders, in this study, the researcher broadly defined evidence as all information sources that potentially inform decision-making. This definition includes both school data and research evidence. These two forms of evidence typically feature in two separate fields of activity and study. This section recapitulates and discusses the main findings from the questionnaire and interviews per research question (5.4.1–5.4.2). The section concludes with final observations concerning the study (5.4.3).

5.4.1 Do school leaders use evidence in their school intervention decisions?

The analysis of the questionnaire findings demonstrated very high levels of self-reported evidence use in school intervention decision-making by Dutch secondary school leaders. The reported evidence use rates are all the more striking in light of earlier studies indicating that Dutch school leaders' capacity to use data[64] for school improvement is un(der)

"Programme for International Student Assessment." Both factors, however, had a mean score of a meagre 1.5. This indicates a minimal influence of both national and international benchmarks on school leaders' school intervention decision-making.

64 Note the difference between school data and this study's broad definition of evidence, which includes both school data and other evidence sources.

developed (OECD, 2016a; Schildkamp et al., 2014). On this study's questionnaire, nearly 200 school leaders indicated having used one or more evidence sources in no less than 72% of their school intervention decisions. The questionnaire additionally highlighted large differences in evidence use across the 16 school intervention subdomains; figures ranged from 50% to 85%. The interviews, however, attenuated rather than confirmed the high percentage of self-reported evidence use from the questionnaire. Although evidence use was not an explicit topic of discussion, it proved a minor theme in the school leaders' accounts of their school intervention decision-making. This outcome occurred despite the fact that differentiation interventions are included in the subdomain of pedagogical approaches, which received a relatively high score for evidence use in the questionnaire (77%). The interview findings correspond to Harris et al.'s observation that it is "difficult to find much evidence of subsequent sustained take-up of research findings and insights at practitioner level, except where they are part of mandated national strategies . . . or where national policies are closely tailored to research evidence" (Harris et al., 2013, p. 6).

Drawing on a typology developed by Weiss and Bucuvalas (1980), Penuel, Briggs, et al. (2016) identified three main types of research use: instrumental, conceptual, and symbolic/political. Instrumental use implies the use of research to guide or inform a specific decision. When research is used conceptually, it induces changes in how a person views either a problem or the possible solution space for a problem. Symbolic/political use entails research use to validate or legitimate a decision that has already been made. In their school intervention decision-making, the interviewed school leaders demonstrated conceptual evidence use at most, even with the broad definition of evidence applied in this study. Only one of the interviewed school leaders used evidence instrumentally. He chose the specific differentiation intervention only after having studied various evidence sources. Two school leaders were retrospectively searching for academic evidence to support their decision to pursue the specific differentiation intervention; such actions represent cases of symbolic/political evidence use (if they indeed managed to find evidence). The other school leaders used evidence conceptually at most, even with the broad definition that the school leaders themselves stretched even further. Unlike instrumental and symbolic/political evidence use, conceptual evidence use does not necessarily manifest itself directly or explicitly. Therefore, this type of evidence use is difficult to verify from the interview data.

5.4.2 What kind of evidence do school leaders use in their school intervention decisions?

The questionnaire yielded several insights into the kind of evidence that school leaders use in their school intervention decisions. The three main observations are recapitulated here: First, although school data and action research are school leaders' preferred evidence sources, other evidence sources—such as evidence from academia, knowledge brokers, or other schools— also account for a considerable share of total evidence use. Second, evidence sources are quite often (45%) applied in combination rather than independently. Third, school leaders' open-ended answers about evidence sources indicated a rather liberal use and, hence, interpretation of evidence. Answers such as "conversations with staff members," "consultations outside our school," and "theoretical examples" would in many studies not be considered as reports of evidence use. In this study, these responses were deemed indicative of evidence use, if only to demonstrate school leaders' own interpretations and use of evidence, not being restricted by a definition that primarily serves academic purposes. Whether these fairly indeterminate evidence sources mainly lack concreteness "on paper" or whether the same is true in practice is a topic for further exploration. In this respect, the interviews hinted toward the latter interpretation.

The interviews, first, underlined the liberal interpretation and use of evidence, especially when comparing this interpretation to common conceptions of the term in discussions about evidence use (Biesta, 2010). Among various illustrations of this observation are the narrowing of an investigative school culture to "asking questions" and the equating of evidence-informed leadership with visiting one "good practice" school and a conversation with a knowledge broker with an overt agenda to sell a particular intervention. This school leaders' self-reported evidence-informed school leadership was not supported by the use of either school data or (academic) evidence. All in all, this study's findings indicate an even broader interpretation of evidence than that encountered in comparable studies on research use by U.S. school district leaders (Farley-Ripple, 2012; Penuel, Farrell, et al., 2016). Based on the findings of these U.S. studies, Penuel et al. have already suggested "the need for a more nuanced understanding of the differences between leaders' conceptions of research evidence and researchers' conceptions identified in earlier research" (Penuel, Farrell, et al., 2016).

Second, compared to the questionnaire findings, the interviews showed a rather modest use of school data and action research. Evidence from other schools, on the other hand, was cited more frequently in the interviews than one would have expected based on the questionnaire. Such mimicking of other schools' good practices can be considered as expressions of mimetic isomorphism (DiMaggio & Powell, 1983). Only

one school leader used academic evidence in his considerations, whereas five school leaders demonstrated an outright skepticism toward academic evidence. Evidence from knowledge brokers also played a more dominant role in the interviews than one would have expected based on the questionnaire, while policy sources were totally absent.

The interviews, third, indicated that evidence use is highly dependent on personal relationships. Rather than referring to written evidence sources, the school leaders reported using evidence that originated from "personalized sources," such as professional learning networks, teachers enrolled in master's programs, knowledge brokers, and good practices at other schools. This finding corresponds to Cooper and Shewchuk (2015, p. 3)'s observation that "practitioners rarely come into contact with primary research directly from academic journals or lengthy research reports. Instead, educators engage with research indirectly through colleagues, professional development, the media, and often through various third-party organizations."

5.4.3 Final observations

Regarding the first research question of whether school leaders use evidence in their school intervention decisions, the two research methods yielded divergent outcomes. The interviews did not confirm the high level of evidence use that the school leaders indicated in the questionnaire. In the interviews, the school leaders additionally demonstrated conceptual evidence use rather than instrumental or symbolic/political evidence use, even given the broad definition of evidence applied in this study. The interviews did confirm various observations from the questionnaire concerning the second research question on the kinds of evidence that school leaders use in their school intervention decisions. Both research methods, first, revealed significant diversity in used evidence sources, many of which were highly dependent on personal relationships. Second, both the questionnaire and interviews indicated a rather liberal use and, hence, interpretation of evidence.

For a correct interpretation of this study's findings, one should realize that in the interviews, no direct questions were asked about the role of evidence in decision-making processes. This choice was consciously made with the intention to avoid a potential social desirability bias. The researcher assumed that if evidence had indeed influenced the school leaders' intervention decisions, it would manifest itself in their accounts of their considerations. Comparing the interview findings with the questionnaire findings legitimizes this choice. One should, however, take care not to draw overly firm conclusions based on this study. The interviews that further explored the questionnaire findings only included 10 school leaders. Although the school leader sample was selected according to the principles of maximum variation sampling, additional interviews might have refined

the findings. It was furthermore an omission to not integrate all evidence sources in the factor list that school leaders scored at the end of the interviews regarding their influence on their intervention decisions. Doing so might have provided additional opportunities for the school leaders to illustrate their use of the different evidence sources. Finally, a large share of the evidence items from the questionnaire provided too little information for categorization purposes for both pursued and not-pursued interventions (23% and 22%, respectively). The categorization of these items could have shifted the presented distributions considerably. Despite these acknowledged limitations, this study does provide new empirical insights into school leaders' evidence use that can and should be further explored.

6

Chapter 6

Summary and discussion

This chapter first recapitulates the research aim, questions, and methodological approach that underlie the dissertation (6.1). Section 6.2 summarizes the research aims, methodological approaches, and main findings of each of the four studies that comprise this dissertation. The main findings concerning the three research questions that guided this dissertation are then discussed in Section 6.3. The final section (6.3.4) offers concluding observations.

6.1 The dissertation's research aim, research questions, and methodological approach

Despite knowledge of the formal distribution of decision-making responsibilities in education systems, the acknowledged impact of schools and school leaders on student learning, and the wide availability of research evidence and school data to inform decision-making, current discussions about school autonomy are largely uninformed by analyses of how school leaders actually exercise their decision-making responsibilities. This dissertation aimed to uncover how school leaders actually use school autonomy. Due to the high level of school autonomy regarding a broad range of decision-making areas, Dutch secondary education was considered an exemplary setting to study school leaders' actual exercise of school autonomy. Although this study could have been performed in any sector of the Dutch education system, secondary education was selected for its organizational complexity. School leaders with the ultimate process responsibility for their school were regarded as decision-making executives at the school level.

The dissertation was guided by the following three research questions:

1. Which school interventions do Dutch secondary school leaders pursue?
2. What motives underlie school leaders' school intervention decisions?
3. What role does evidence play in school leaders' school intervention decisions?

In an attempt to obtain both broad and deep insights into school leaders' exercise of school autonomy, the researcher approached the research questions by means of both quantitative and qualitative research methods. The mixed-methods approach was expected to generate more valuable insights into school leaders' exercise of school autonomy than either of the individual approaches would have enabled on its own. The combination of qualitative and quantitative methods is, moreover, regarded as one form of triangulation, namely, methodological triangulation (Tashakkori & Teddlie, 1998). Even though the combination of both quantitative and qualitative research methods was planned at the start of the research project, the results of the first study informed the aim and methodological approach of the following study, and so on. This partly

emergent design led to four studies with varying methodological approaches, most of which themselves employed mixed methods.

6.2 Summary

This section summarizes the research aims, methodological approaches, and main findings of each of the four studies. Each section (6.2.1–6.2.4) covers one study.

6.2.1 The construction of an empirically based classification of school interventions and the application of this classification to the distribution of current Dutch secondary school interventions (Chapter 2)

This study, first, presented the construction and validation of an empirically based classification of school interventions that allows for the identification, analysis, and comparison of the actual exercise of school autonomy. The classification is organized via three main domains: education, organization, and staff. Each of these domains consists of various subdomains, with the entire framework composed of 16 such subdomains. The construction is based on the digital questionnaire responses of 196 Dutch secondary school leaders reporting a total of 735 school interventions. Due to the high level of school autonomy in the Netherlands, school leaders have decision-making authority in many areas. In a deliberate attempt to grasp the full potential range of actual school interventions, the researcher formulated the question on school interventions in an open-ended manner. For the same reason, a *school intervention* was broadly defined as a planned action intended to cause change in the school. To achieve practical (i.e., face and content) validation of the classification, the researcher actively involved school-level decision-makers in all stages of the study. Consequently, the classification can capture a wide range of school interventions; has enough depth and detail to allow for meaningful distinctions; and features a logic and structure to enhance wide usability at the local, national, or interventional level by practitioners, policy-makers, training institutes, and researchers alike.

Using the developed classification, this study secondly presented two distributions: one involving the 595 school interventions that the school leaders had introduced or were about to introduce, and one comprising the 140 interventions that they had seriously considered but not introduced. Both distributions highlight the dominance of educational interventions: close to half of all introduced and considered interventions were educational in nature. Organizational interventions were, in turn, more frequent than staff interventions. There was a clear dominance of 4 of the 16 subdomains: educational programs, learning environments, pedagogical approaches, and professional culture. These four subdomains—three of which are in the educational domain—

comprised nearly 60% of all school interventions that the Dutch secondary school leaders either pursued or considered pursuing. The three most frequent interventions were digital tools and methods for teaching and learning, peer professionalization, and differentiation interventions.

6.2.2 The relationship between actual school interventions and factors found in educational effectiveness syntheses (Chapter 3)

This study analyzed how current Dutch secondary school interventions relate to the effectiveness factors presented in three internationally authoritative educational effectiveness syntheses: Robinson et al. (2009), Scheerens (2016), and Hattie (2009). Meta-analyses are comprised of multiple individual rigorous studies, and as such, they present robust results regarding the effectiveness of the items in question. Since no syntheses have been exclusively based on Dutch secondary education research, international syntheses were employed. To analyze the interventions from both a school perspective and a school leadership perspective, the researcher used syntheses from both effectiveness traditions. The different aggregation levels of the effectiveness factors were accounted for, and effect sizes and ranks were included when available.

The comparative analysis resulted in five main findings. First, the vast majority of analogies between school interventions and effectiveness factors were general in nature. This means that the analogies were so abstract that they were not highly informative. Second, a few school interventions paralleled relatively specific factors from Scheerens (2016) and, particularly, Hattie (2009). The factors presented in Robinson et al. (2009) all had a general character. Third, a diverse range of school interventions, and especially those in the organizational and staff domains, lacked an analogous effectiveness factor altogether. Fourth, the mean effect sizes calculated for those interventions analogous to effectiveness factors indicated that across all syntheses, current Dutch school interventions tended to be similar to factors with relatively low—or even negative—effect sizes. Fifth, the more detailed analysis of the three most frequent interventions suggested that the three syntheses used for this comparative analysis provide little evidence of these particular interventions notably improving student achievement. All in all, the comparative analysis demonstrated that a wide range of current Dutch secondary school interventions lack an analogous factor in one or more of the examined syntheses, despite the relatively inclusive stance adopted in identifying those analogies. Additionally, the mean effect sizes, along with the findings regarding the three most frequently implemented interventions, demonstrated that the three syntheses offer little evidence that the vast majority of interventions substantially improve cognitive student achievement.

6.2.3 School leaders' personal beliefs and the motives behind their school intervention decisions (Chapter 4)

This study aimed to obtain a better understanding of the motives behind Dutch secondary school leaders' school intervention decisions. To this end, 10 individual semi-structured interviews were conducted with school leaders who were purposefully sampled based on the strategy of maximum variation sampling. A literature review showed that school leader behaviors and actions tend to be influenced by a great many, often interlinked, factors at the personal, organizational, and societal levels. Because of the observed dominance of personal beliefs in this interplay in some studies, this concept was included in the research questions that guided this study. In an attempt to make the topic of school intervention decision-making concrete enough for school leaders to share their practices, the researcher applied the criterion of specificity. To both connect with school leaders' current intervention preferences and enable a potentially large sample, the researcher selected for this purpose a specific intervention that appeared frequently in the questionnaire: differentiation. At the end of the interview, school leaders were asked to score a list containing factors at the personal, organizational, and societal levels that potentially affect school intervention decisions. The factor list was included as a form of data triangulation to increase the validity of the interview findings.

Discussed using a remarkably similar vocabulary, Dutch school leaders' personal beliefs refer to connecting and collaborating with others, a search for moral purpose and significance, and the need to facilitate talent development as well as well-being and a safe learning environment. These shared core beliefs convey a strong, value-driven, holistic, people-centered orientation with an emphasis on relationships with students and colleagues and their development and well-being. The reasons the school leaders chose to initiate a differentiation intervention proved to be closely related to their personal beliefs. Rather than being motivated by the (explicit) ambition to improve cognitive student achievement or to follow research evidence, differentiation was predominantly motivated by the school leaders' beliefs about the pedagogical task of education. Three of the four prevailing motives were related to providing education that is tailor made and directed at talent development, that motivates and activates students, and that prepares them for their future roles in a changing society. The fourth dominant cluster of motives arose from the need to survive as a school. The school leaders attached great importance to the school's distinctive profile and image among neighboring schools so as to ensure student enrolment in an education system with school choice and, in many areas, declining student numbers. Individual organizational and societal factors played a smaller role in the school leaders' decision-making concerning the differentiation intervention than most personal factors. The main exception was the school mission statement, which tended to unite factors at all three levels and, as such, provided

the school leaders with the organizational (school policy) foundations to pursue the particular intervention. These mission statements, in turn, closely matched the school leaders' personal beliefs. Finally, all school leaders indicated that their personal beliefs not only influenced their decision regarding the specific differentiation intervention but guided their intervention decisions in general.

6.2.4 Evidence use by school leaders in school intervention decision-making (Chapter 5)

This study aimed to provide insight into school leaders' actual use of evidence in their school intervention decision-making. School leaders' evidence use was explored by means of a mixed-methods approach that combined observations from a large number and wide variety of school leaders with illustrations of school leaders' actual use and interpretation of evidence in their decision-making practice. Evidence was defined broadly as including school data, school action research, and research evidence (not exclusively academic evidence). In a digital questionnaire, school leaders were asked to indicate per entered school intervention if they had used evidence in their considerations regarding whether to pursue the intervention. School leaders were subsequently asked to list the consulted evidence source(s) concerning one of their—randomly selected—school interventions. In a series of semi-structured interviews, no direct questions were asked about the role of evidence in the decision-making process to avoid a potential social desirability bias. It was believed that if evidence had indeed influenced the school leaders' intervention decisions, it would manifest itself in their accounts of their considerations.

In the questionnaire responses, 196 school leaders, first, demonstrated a very high self-reported use of evidence in their school intervention decision-making. The questionnaire, second, pointed to large differences in evidence use across the 16 school intervention subdomains. Third, although school data and action research proved to be school leaders' preferred evidence sources, other evidence sources—such as evidence from academia, knowledge brokers, or other schools—accounted for a considerable share of total evidence use as well. Fourth, school leaders frequently used two or more evidence sources in the decision-making process concerning one intervention. Fifth, school leaders' open-ended answers about evidence sources indicate a very liberal use and, hence, interpretation of evidence, even compared to the expansive definition that was applied.

Compared to the questionnaire findings, the interviews, first, attenuated rather than supported the high levels of self-reported evidence use. Second, the interviews underlined the liberal interpretation and use of evidence. The interviews additionally indicated that evidence use is highly dependent on personal relationships. Rather than referring to formalized evidence sources, the school leaders demonstrated evidence use that originated from personalized sources, such as professional learning networks, teachers following master's programs, knowledge brokers, and good practices at other schools. Most school leaders used evidence conceptually at most, even with the broad definition that the school leaders themselves stretched even further. Only 1 of the 10 interviewed school leaders used evidence instrumentally. At the time of the interviews, two school leaders were searching for academic evidence to support an intervention they had already introduced. If they indeed managed to find evidence, these instances would represent cases of symbolic/political evidence use.

6.3 Discussion

This section presents a discussion of the main findings in light of the three research questions that guided this dissertation. Each research question comprises a separate section (6.3.1–6.3.3). The final section (6.3.4) offers concluding observations in light of the potential valorization of this dissertation.

6.3.1 Which school interventions do Dutch secondary school leaders pursue?

This dissertation has illustrated that Dutch secondary school leaders tend to make use of the high level of school autonomy mainly in educational and professionalization intervention areas. They demonstrate a clear preference for interventions in four subdomains: educational programs, learning environments, pedagogical approaches, and professional culture. Logically, the three most frequent interventions—digital tools and methods for teaching and learning, peer professionalization, and differentiation interventions—are found in these subdomains. The dominance of interventions in these subdomains means that interventions in other school intervention areas—such as school culture, organization of education, stakeholder relationships, and staffing policy—are less frequent. The prevalence of interventions in four subdomains can be interpreted in different ways. It might, for example, be that school interventions in the other subdomains are more frequent in actual school practice than the distribution suggests. Following the principles of distributed leadership (Harris & Spillane 2008), one could posit that other officials in the school organization—such as middle managers, HR officers, or school board executives—are predominantly responsible for decision-making in those subdomains that were cited less often. In that case, school autonomy might be more extensively exploited across the various subdomains, albeit not by the school

leader alone. School leaders may indeed be more concerned with interventions in specific subdomains than in others. This outcome might indicate a discrepancy between the de jure and de facto exercise of school autonomy, with school leaders using their decision-making authority more narrowly than the Dutch education system allows them to. Such use would align with the observation by Hooge (2017, p. 38) that "in practice, schools' educational and organizational autonomy is the outcome of a complex play of forces between the government, school boards, policymakers, school managers, teachers, parents, pupils, and other stakeholders." It might also be that school leaders are genuinely more interested in interventions in the four higher scoring subdomains because they align with these leaders' personal educational beliefs and ambitions, match stakeholder demands, or are inspired by evidence in the broadest sense of the notion. Robinson et al. (2009)'s five general factors of effective school leadership indicate that interventions in the areas of teacher professionalization, teaching, and the curriculum have a higher impact on student outcomes than interventions in other areas. These factors show similarities, albeit at a rather high abstraction level, to the subdomains professional culture, pedagogical approaches, and educational programs. When zooming in on the more specific analogies encountered in the comparative analysis, one finds that expected effectiveness according to the common standards of EER does not explain many interventions that are currently initiated in Dutch secondary education. A considerable number of actual interventions displayed similarities to effectiveness factors with relatively low or even negative mean effect sizes.

In sum, the distribution of current Dutch school interventions across the classification's 16 subdomains deserves further exploration. Deeper insights into the motives behind school leaders' intervention decisions are provided in the next section. It might additionally be interesting to compare the Dutch school intervention distribution with its counterparts in systems with differing levels of school autonomy and accountability. Does the Dutch distribution equal that of systems with similar levels of school autonomy and accountability, or do similar systems show totally different distributions? And, how does the distribution relate to distributions in systems with much less school autonomy? Such comparative analyses might provide valuable insight into the actual use of school autonomy across education systems with both similar and different characteristics.

6.3.2 What motives underlie school leaders' school intervention decisions?

Rather than being motivated by the explicit ambition to improve cognitive student achievement or by research evidence, Dutch secondary school leaders predominantly find that their school intervention decisions are motivated by their personal beliefs about the pedagogical task of education. These personal beliefs are, moreover, highly shared among school leaders and convey a strong, value-driven, holistic, people-centered

orientation with an emphasis on relationships with students and colleagues and their development and well-being. These shared core beliefs, in turn, strongly relate to their schools' mission statements. This link implies that over time, school leaders' personal beliefs are extended to and embedded in the school organization as a whole.

The motives behind school leaders' intervention decisions involve the pedagogical ambition to provide education that is tailor made, that is directed at talent-development, that motivates and activates students, and that prepares them for their future roles in a changing society. The second dominant motivation concerns the image and distinctive profile of the school, which stems from the school leader's responsibility to safeguard the continuation of the school. This motive is directly related to school choice as an inherent feature of the Dutch education system. School choice, in turn, gains significance given declining student numbers due to population decline in many areas. To ensure continuous student enrolment, school leaders need to unremittingly protect their school's good image and provide a distinctive profile relative to neighboring schools.

Neither of these dominant motives resembles the earlier observation that the Dutch Inspectorate of Education's assessment framework frames discussions about school improvement around cognitive student achievement in core subjects (Ehren et al., 2015). This dissertation has revealed that improving cognitive student outcomes is not an explicit motive driving school leaders' intervention decisions.[65] In general, school leaders interpret cognitive student achievement as a set of externally defined accountability standards. As long as these standards are met, Dutch secondary school leaders are instead motivated by holistic, development-oriented, student-centered, and non-cognitive ambitions. This finding is rather striking in light of current debates about the alleged influence of such standardized instruments on Dutch school practices, as critics have claimed that these instruments limit and steer practitioners' professional autonomy.

However, instead of bluntly concluding that Dutch secondary school leaders are not driven by the desire to improve cognitive student achievement as commonly defined in effectiveness research or enacted in standardized accountability frameworks, one could also claim that Dutch school leaders define or enact the notion differently. Rather than finding the continuous improvement of cognitive student achievement the holy grail of education, they seem more driven by the goal of offering their students education

65 School leaders who lead schools with a negative Inspectorate of Education assessment are likely more driven by the aim of improving cognitive outcomes in core subjects, as such outcome measures are the basis of the assessment framework. However, on September 1, 2017 only 2.7% of all 2,746 secondary school tracks (the Inspectorate of Education assesses school tracks rather than schools) had received a negative assessment (Dutch Inspectorate of Education, 2018b).

that prepares them for their future roles in a changing society. This interpretation implies more customized education with a focus on talent development and non-cognitive outcomes such as motivation and ownership. Such objectives are seldom used as outcome measures in effectiveness research or accountability frameworks. This, in turn, might partially explain the modest use of evidence in school intervention decision-making (see the next section).

The dominant motives behind school interventions decisions as expressed by the interviewed school leaders are remarkably in line with the distribution of pursued interventions that resulted from the questionnaire completed by nearly 200 school leaders. All four high-scoring school intervention subdomains, including the three most frequent interventions, can be linked to the dominant identified motives. First, interventions in the subdomain of educational programs typically relate to both pedagogical motives (e.g., the aim of improving an education program to better prepare students for their future role in society) and motives related to school choice (e.g., the ambition to offer an appealing education program to attract students and parents to the school). Second, interventions concerning learning environments—including the most frequent intervention in the entire dataset, digital tools and methods for teaching and learning—are linked to pedagogical motives (e.g., the desire to facilitate more individualized and tailor-made education). However, digital tools and methods are not infrequently introduced to make a school more appealing for student and parents, following modern stakeholder demands. Third, interventions in the pedagogical approaches subdomain—including popular differentiation interventions—obviously often entail pedagogical motives (e.g., the ambition to provide education that is tailor made and that motivates and activates students). This same ambition is also likely to appeal to students and, more importantly, parents in light of school choice. Finally, interventions concerning the professional culture—including fashionable peer professionalization interventions—are related to school leaders' concerns about talent development and the well-being of colleagues.

6.3.3 What role does evidence play in school leaders' school intervention decisions?

This dissertation suggests that if evidence plays a role in school leaders' intervention decision-making, it is often used implicitly and conceptually, and it frequently originates from personalized sources. This suggests a rather minimal direct use of evidence in school intervention decisions. The liberal conception of evidence that school leaders demonstrate is striking, all the more so if one compares this interpretation to common conceptions of evidence in policy and academic discussions about evidence use in education. The mixed-methods approach revealed that academic evidence use, especially instrumental evidence use, is an exception rather than common practice in

school leaders' school intervention decision-making. School leaders tend to assign a greater role to tacit knowledge and intuition in their decision-making than to formal or explicit forms of knowledge.

Both the empirical findings from the questionnaire and interviews and the outcomes of the comparative analysis raise questions in light of the ongoing debate about the gap between educational research and practice. Are Dutch school leaders generally only slightly interested in using research evidence, especially academic evidence, to inform their school intervention decision-making? This stance would, first, indicate the failure of past efforts to increase evidence-informed school leadership. Second, if this interpretation were correct, it should urge policy-makers, researchers, school board executives, and training institutes to discuss and design more effective and viable ways to ensure that evidence-informed leadership becomes an inherent requirement of school leader professionalism and practice. If, on the other hand, school leaders are indeed interested in using more research evidence in their decision-making but insufficiently recognize common outcome measures or specific (meta-)evidence on their considered interventions, then we have a different problem. If Dutch school practice is in fact substantially different from the practices and outcome measures examined in popular effectiveness syntheses, then how are Dutch school leaders to solidly inform their decisions? Are Dutch school leaders alone in deviating substantially from what is presented in popular effectiveness syntheses, or do school leaders in other jurisdictions act similarly? These questions require answers if we truly want to bridge the acknowledged gap between educational research and practice.

6.3.4 Final observations

In the Netherlands, school leaders are seldom directly involved in the development and monitoring of policies (OECD, 2016a). This also applies to the de facto use of school autonomy. This dissertation has demonstrated that Dutch secondary school leaders predominantly exercise school autonomy in educational and staff professionalization intervention areas. Their school intervention decisions tend to be grounded in tacit knowledge and personal beliefs. These personal beliefs exhibit common denominators, strongly relate to school mission statements, and demonstrate a value-driven, holistic, people-centered orientation. Pedagogical ambitions and motives that derive from parental and student choice of schools dominate their intervention decisions. The goal of improving cognitive student achievement is absent as an explicit motivation driving their intervention decisions. Motives related to evidence use or standardized accountability frameworks are rare. As long as these standards are met, school leaders do not display the overt ambition to improve such outcomes.

These findings can be interpreted in different ways depending on one's views about the role and professional requirements of school leaders. Rather than concluding that student achievement plays no role in school intervention decision-making, one could deduce from this dissertation that Dutch secondary school leaders have a different interpretation of student achievement than policy-makers and researchers: an interpretation that is broader than cognitive accomplishments alone and includes a focus on talent development and non-cognitive outcomes such as motivation and ownership. If one sees the preparation of children for their future roles in society as the main purpose of education, it is commendable that the holistic upbringing and well-being of children guide Dutch school leaders' decision-making. Though diverging from more rational or economics-based views about the purpose of education, Dutch school leaders demonstrate clear views regarding what education is about for them. Unfortunately, there is little evidence on what works regarding these views on which school leaders can base their decision-making.

However, one can also question school leaders' inclination toward pedagogical motives and the absence of evidence in their decision-making. The formulation of concrete and measurable goals enables accountability, which, in turn, is key to improving student achievement via school autonomy (Woessmann et al., 2009). Accountability for cognitive student achievement is regulated externally via standardized frameworks and instruments. Accountability regarding pedagogical non-cognitive goals is more challenging to establish, as such goals are more difficult to concretely define, let alone measure and value. In itself, pedagogical accountability sounds somewhat paradoxical. However, if it is mainly pedagogical ambitions that drive school leaders' intervention decisions and we consider accountability both an inherent feature of school leader professionalisms and a prerequisite of school autonomy, then a discussion about how to formalize pedagogical accountability in school leaders' practices must take place.

This discussion should also involve evidence use. In a professional context in which school leaders are increasingly urged to use the accumulating supply of evidence in their daily practices, identifying whether school leaders are generally reluctant to use evidence or whether they consider the available evidence insufficiently applicable to their school practice is critical. If they prove to be reluctant to use evidence, then policy makers, training institutes, and school boards should take responsibility for the professional requirements and development of school leaders. With a professional standard and register—including sections on evidence use—already developed,[66] these actors should both require school leaders to meet the agreed standards regarding evidence use and

66 For further details, see "Professional standard for secondary education school leaders" by the Dutch Council for Secondary Education (2014) and the website concerning the professional register of secondary education school leaders by the Dutch Register for Secondary Education School Leaders (2018).

facilitate that outcome. The fact that school leaders were involved in the development of these instruments implies that they themselves agree that evidence use is an inherent feature of their school leadership. In case school leaders consider currently available evidence insufficiently applicable for their practices, this dissertation offers practical suggestions for future effectiveness research regarding topics and/or outcome measures to increase its usefulness and consequently influence actual school practice.

Accountability will only lead to improvement if it addresses information relevant to users (Fuhrman & Elmore, 2004) so that it motivates individuals and schools to use that information to improve practice. Accountability policies in education are more motivating and hence more likely to impact practice if they are focused on student needs and professional identity (O'Day, 2002). Additionally, "data-wise school leadership" is considered a prerequisite for making external accountability beneficial for student learning (Pont et al., 2008, p. 52). This dissertation provides valuable insight into what constitutes Dutch school leaders' professional identities regarding their school intervention preferences, motives, and evidence use. This knowledge can facilitate the design or adjustment of initiatives intended to intensify school leaders' pedagogical accountability and evidence use such that they become meaningful—in other words, aligned with school leaders' views of the purpose of education—to school leaders.

Preferably, such initiatives affect not only accountability policies but also school leaders' professional standards and qualifications. The Dutch Education Council recently recommended the government to take measures to improve the quality of school leaders via the stimulation and facilitation of education and training needs, accompanied by higher demands in terms of their professionalisation (Dutch Education Council, 2018). Compared to school leaders internationally, Dutch school leaders spend very little time on professional development (OECD, 2014c) and prefer short and informal professional development activities such as attending conferences and cooperating with colleagues over lengthier and more formal programs (Krüger & Andersen, 2017). This is the case despite the fact that research has shown that shorter programs are much less effective than lengthier ones and despite a lack of research about the effects of informal learning (Krüger & Andersen, 2017). Adhering to the current professional standard and setting requirements for school leaders' professional qualifications and development might result in a more teleological exercise of school autonomy in which personal beliefs and tacit knowledge are combined with evidence-use and pedagogical accountability.

The last observation is a methodological one. Apart from the broad and deep insights that the mixed-methods approach yielded regarding the actual exercise of school autonomy by Dutch secondary school leaders, the combined analysis of quantitative and qualitative data sources in Chapter 5 in particular exposed the vulnerability of applying either of the two approaches individually. If the questionnaire data alone had been collected, this dissertation would have presented a rather optimistic view of Dutch secondary school leaders' evidence use in school intervention decision-making. If, on the other hand, this theme had only been analyzed by means of the interview data, this optimistic view would have changed quite drastically into a fairly pessimistic one. As often, the truth is likely to lie somewhere in the middle. The level of gradation deserves further exploration. It should, however, be noted that this discrepancy would have remained hidden if applying only one approach. This finding underlines the relevance of methodological triangulation.

In summary, the insights of this dissertation contribute to a better understanding of the actual use of school autonomy by school leaders. These insights, hopefully, lead to a closer alignment of policy, research, training, and school (leader) initiatives to maximize the potential impact of school autonomy. Based on Dutch secondary school leaders' personal beliefs, this would mean helping young people to develop their skills, knowledge, and disposition to succeed in modern society.

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Appendices

Appendix A (Chapter 2) | Digital questionnaire[67]

Page 1

Are you as a school leader responsible for one or more school locations?

- ○ I have integral responsibility for one school location.
- ○ I have integral responsibility for more than one school location.

What is the name of your school? If you have integral responsibility for more than one school location, please provide the name of the group of schools.

Answer field

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Where is your school or group of schools located?

Answer field

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.....

Page 2

For how many years have you worked as a school leader?
This does not only imply the period at your current school or group of schools.

Answer field

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.....

67 This is a translation of the original questionnaire in Dutch. Radio buttons are used to indicate that only one answer could be selected; square boxes imply the possibility of multiple answers. School leaders could reach the digital version of the questionnaire via http://www.interventiesschoolleidersvo.nl. The Dutch translation of the URL is 'interventions secondary school leaders.'

Which educational track(s) does your school or group of schools comprise? You can tick multiple boxes.

- ☐ Practical training programs[68]
- ☐ Basic pre-vocational secondary education[69]
- ☐ Advanced pre-vocational secondary education[70]
- ☐ Mixed pre-vocational secondary education[71]
- ☐ Theoretical pre-vocational secondary education[72]
- ☐ Senior general secondary education[73]
- ☐ Pre-university education[74]

Page 3

What is the total number of pupils that attend your school or group of schools?

Answer field

.....
.....
.....

Did this number in the last year predominantly:

- ○ Rise
- ○ Decline
- ○ Stay equal

68 The Dutch term for this track is "praktijkonderwijs."
69 The Dutch term for this track is "vmbo - basisberoepsgerichte leerweg."
70 The Dutch term for this track is "vmbo - kaderberoepsgerichte leerweg."
71 The Dutch term for this track is "vmbo - gemengde leerweg."
72 The Dutch term for this track is "vmbo - theoretische leerweg / mavo."
73 The Dutch term for this track is "havo."
74 The Dutch term for this track is "vwo."

Page 4

To which education type does your school or group of schools belong?

- ○ Public education[75]
- ○ Confessional private (but publicly funded) education[76]
- ○ General private (but publicly funded) education[77]
- ○ Private (and privately funded) education[78]

Ticking either of the first three boxes led to the following question:

What is the school's or group of schools' pedagogical concept?
In case of a group of schools, multiple answers are possible.

- ☐ Regular/traditional
- ☐ Montessori
- ☐ Jenaplan
- ☐ Dalton
- ☐ Freinet
- ☐ Other pedagogical concept, namely …

75 The Dutch term is "openbaar onderwijs."
76 The Dutch term is "confessioneel/levensbeschouwelijk bijzonder onderwijs."
77 The Dutch term is "algemeen bijzonder onderwijs."
78 The Dutch term is "particulier onderwijs."

Ticking the second box, moreover, led to the following question:

What is the school's or group of schools' (religious) denomination?[79]
In case of a group of schools multiple answers are possible.

- ☐ (Roman) Catholic
- ☐ Protestant Christian
- ☐ Anthroposophic[80]
- ☐ Other denomination, namely …

Unnumbered page

What is an intervention?
In this study, an *intervention* is defined as a planned action intended to cause change in the school. This change can either be an adjustment of current policies or the introduction of new policies. An intervention can both relate to educational learning processes and to the organization of the school in the broadest sense of the term.

I kindly ask you to list only those interventions that fall within the educational institution's scope of autonomy. Interventions that are carried out to comply with external demands are not included in this study.

79 The researcher only realized upon analysing the outcomes of the questionnaire that unlike the English meaning and frequent Dutch interpretation of the notion, "public education" and "general private education" are also considered as denominations in the Dutch educational system. If the researcher had had this information, page 4 of the questionnaire would have been constructed differently. However, all necessary information with regard to educational type and denomination was collected regardless. Based on the fact that none of the interviewed school leaders or other respondents made a remark about the arrangement of the related questions and answers, the researcher assumed that the "official" distribution of the manifold denominations—including the non-religious ones—in the Dutch educational system is a blurred area for many, including educational professionals.

80 In the Dutch education system, the anthroposophic philosophy is considered a denomination.

Page 5

Which interventions[81] (with a maximum of three) within your educational institution's scope of autonomy did you introduce in the past school year or are you intending to start in the current school year (2013–14 / 2014–15)?

Examples of interventions
A few examples of interventions within the educational institution's scope of autonomy are the introduction of new pedagogical approaches, bilingual education, the choice of teaching methods, adaptations to the curriculum, procedures for grade retention, IT use, the organization of student care and support, feed-back mechanisms amongst teachers, recruitment, reassessment of the distribution of non-teaching tasks amongst teachers, cross-social collaborations, and an organizational rearrangement or merger as a consequence of a demographic decrease. Please note that these are just a few examples. The list of possible interventions is much more extensive and diverse.

Three answer fields
.....
.....
.....

Page 6

Please indicate per intervention the reason that you introduced this intervention.

A maximum of three answer fields preceded by the intervention(s) named in response to the previous question.
.....
.....
.....

81 Each time the word *intervention* was used from this page onward, it was accompanied by an "i" symbol. This symbol showed the definition of the term when the user placed the cursor on it.

Page 7

Please indicate for which interventions you used evidence in your deliberations.

What is evidence?
In this questionnaire, the notion of *evidence* is broadly interpreted. It includes, for example, scientific evidence, research that is produced by universities/academics, research that is carried out by external organizations such as consultancy firms and (national) expertise centers, research that is "translated" at seminars and in books and magazines, and the analysis and interpretation of data at the school level. This last form of action research can be carried out by teachers, staff members, school managers, and members of the school board.

- ☐ Intervention 1
- ☐ Intervention 2 (if filled out)
- ☐ Intervention 3 (if filled out)
- ☐ None of the above interventions

Page 8

What kind of evidence[82] did you use in your deliberations to introduce *Intervention X*[83]?

Answer field

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.....
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82 Each time the term *evidence* was used from this page onward, it was accompanied by an "i" symbol. This symbol showed the definition of the term when the user placed the cursor on it.

83 A random selection by the questionnaire software of one of the interventions for which the respondent indicated having used evidence in his or her considerations.

Page 9

Are there any interventions within your educational institution's autonomy that you considered in the past or current school year (2013-14 / 2014-15), but deliberately did not introduce?

- ○ yes
- ○ no

Page 10

If you answered "yes," please list a maximum of three interventions that you considered but deliberately did not introduce.[84]

Three answer fields

.....
.....
.....

Page 11

Please indicate, for the intervention(s) that you did not introduce, your reasons for not continuing with it (them).

A maximum of three answer fields preceded by the intervention(s) named in response to the previous question.

.....
.....
.....

84 This question was only shown after a confirmatory answer to the previous question. If the answer to the previous question was "no", the respondent was directly forwarded to the last page of the questionnaire.

Page 12

Please indicate, for the intervention(s) that you did not introduce, whether you used evidence as part of your decision to not take the intervention(s) forward.

- ☐ Not-pursued intervention 1
- ☐ Not-pursued intervention 2 (if filled out)
- ☐ Not-pursued intervention (if filled out)
- ☐ None of the above interventions

Page 13

What kind of evidence did you use in your deliberations to refrain from introducing *Intervention X*[85]?

Answer field

.....
.....
.....

Unnumbered page

Thank you very much for your cooperation. The results will be used to expose patterns in school interventions, considerations, and the use of evidence.

If you wish you to stay updated on the results of this study, please indicate below:

- ○ yes, my email address is: .....
- ○ no

Final page

Thank you once again for your cooperation. You can now close this window.

85 A random selection of one of the not-pursued interventions for which the responded indicated having used evidence in his or her considerations.

Appendix B (Chapter 3) | Table comparative analysis[86]

EDUCTATION

PEDAGOGICAL APPROACHES (N=78)

This subdomain consists of interventions concerning the design or elaboration of (effective) teaching, learning, or educational processes concerning the direct interaction between teacher(s) and student(s). Interventions concerning what is often labelled classroom management are included in this subdomain.

School intervention	Factor from Robinson et al. (2009)	E[87]	R[88]	%[89]	School intervention	Factor from Scheerens (2016)	E[90]	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
					Differentiation, customized pedagogics, individualized pedagogics, personalized learning	Differentiation	−0.1	10	47.4	Differentiation, customized pedagogics, individualized pedagogics, personalized learning	Aptitude / treatment interactions	0.19	108	50.0
					Homework-free school	Homework	0.554	1	1.3	Practical learning, learning to work	Career interventions	0.38	69	3.8

86 All school interventions presented in this table derived directly from the school leader questionnaire, which was translated from Dutch. The listed interventions are by no means exhaustive and should be viewed as examples. The analogies are sorted by frequency per synthesis. When two frequencies were equal, the analogies were sorted by effect size (high to low).

87 E = effect size. An effect size is a standardized measure of the strength of the relationship between two variables. The variables in the three syntheses were mostly school or school leadership practices or interventions, and student achievement. Both Hattie and Robinson 'use[d] the following lower boundaries as a guide when interpreting effect sizes: .2, small; .4, medium; .6, large. Based on his research, Hattie [found] the average student gain to be .35 for a year of teaching in reading, mathematics, and writing' (Robinson et al., 2009, p. 38). Scheerens presented Cohen's standards for interpreting effect sizes: 'according to Cohen (1982), small effects are in the order of r = 0.10, medium effects r = 0.30 and large effects r = 0.50 or higher.' He added that 'it should be noted, however, that several authors argue that Cohen's standards are to be considered as too conservative, and do not match the practical significance of malleable school variables. . . . [Baumert et al. (2006)] discuss a method to compute effect sizes . . . which, when applied to a practical example, suggests that effect sizes of about r = 0.15–0.20 (small to medium according to Cohen's standards) would equal the learning gain in one school year, which they consider as an effect of great practical relevance' (Scheerens, 2016, p. 191).

88 R = rank of the factor in the synthesis. For Robinson, the range was 1–5, while for Scheerens and Hattie, it was 1–12 and 1–138, respectively.

89 % = percentage of school interventions per analogy. When summed, the subdomain percentages total 100%.

90 These effect sizes are the mean effects moderated for "secondary" and "the Netherlands."

School intervention	Factor from Robinson et al. (2009)	E[87]	R[88]	%[89]	School intervention	Factor from Scheerens (2016)	E[90]	R	%	School intervention	Factor from Hattie (2009)	E	R	%
										Teaching focus on learning goals, student improvement plan	Goals	0.56	34	2.6
										Independent learning	Student control over learning	0.04	132	2.6
										Collaborative learning	Cooperative vs individualistic learning	0.59	24	1.3
										Motivation	Motivation	0.48	51	1.3
										Differences between boys and girls	Matching style of learning	0.41	62	1.3
										Teaching across individual subjects	Integrated curricula programs	0.39	67	1.3
										Target language education	Bilingual programs	0.37	73	1.3
										Homework free school	Homework	0.29	88	1.3
										Inclusive education pedagogics	Mainstreaming	0.28	92	1.3
Type B: School intervention analogous to a relatively general effectiveness factor														
All interventions in this subdomain	Planning, coordinating, and evaluating teaching and the curriculum	0.42	2	100	Pedagogical concept, various teaching approaches, different pedagogical approaches, pedagogical approach to reduce students failing tracks, five teacher (behavioral) roles	Teaching strategy (average)*	0.043	-	24.4	Pedagogical concept, various teaching approaches, different pedagogical approaches, pedagogical approach to reduce students failing tracks, five teacher (behavioral) roles	Comprehensive teaching reforms	0.22	105	32.1

School intervention	Factor from Robinson et al. (2009)	E[87]	R[88]	%[89]	School intervention	Factor from Scheerens (2016)	E[90]	R	%	School intervention	Factor from Hattie (2009)	E	R	%
					Independent learning, practical learning, learning to work, meaningful education, student-centered education, interactive teaching methods, demand-driven teaching methods	Teaching strategy (constructivist oriented)	–0.008	6	19.2					
					Teaching focus on learning goals, student improvement plan	Teaching strategy (structured, direct)	0.094	4	2.6					
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Type D: School intervention not analogous to an effectiveness factor														
					Differences between boys and girls, target language education, teaching across individual subjects	-	-	-	5.1					
Remarks														
					* The dataset contains school interventions concerning teaching approaches that are so broadly formulated that the researcher could not conclusively determine to which of the two teaching strategy factors they are more closely related. Since these broadly formulated interventions are clearly linked to pedagogical (teaching) approaches, the average effect size of the two teaching strategy factors was calculated and assigned to these interventions.									

EDUCATIONAL PROGRAMS (N=101)

This subdomain consists of interventions concerning lessons, subjects, courses, or programs offered in a school (track) and formalized within a school (track) curriculum. Interventions concerning formalized extracurricular activities are included in this subdomain.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
										Bilingual program, foreign-language programs	Bilingual programs	0.37	73	12.9
										Technical profile school, science program	Science	0.40	64	8.9
										Talent program	Enrichment	0.39	68	6.9
										Personal trajectories	Student control over learning	0.04	132	5.0
										Numeracy program, mathematics	Mathematics	0.45	54	4.0
										Social internship, career program	Career interventions	0.38	69	3.0
										Culture profile school, arts program	Drama / arts programs	0.35	77	3.0
										Personal development course	Values / moral education programs	0.24	94	3.0
										Integrated curricula program	Integrated curricula programs	0.39	67	2.0
										New extra-curricular program	Extra-curricular programs	0.17	114	2.0

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
										Personal development program, extra attention to skills in the curriculum	Social skills programs	0.40	65	1.0
Type B: School intervention analogous to a relatively general effectiveness factor														
Bilingual education, cultural profile, technical profile, personal development program, new literacy and numeracy program, anti-bullying program, talent program, extra attention to skills in the curriculum	Planning, coordinating, and evaluating teaching and the curriculum	0.42	2	94.1	All interventions in this subdomain*	Curriculum quality / opportunity to learn	–0.12	11	100	Optimizing educational program, adjustment of the curriculum, continuous curriculum through all grades	Curricula (average)*	0.45		27.7
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Cooperation with universities, extracurricular programs, community colleges with partners in the area	Creating educationally powerful connections	-	-	5.9										
Type D: School intervention not analogous to an effectiveness factor														
										Entrepreneurial education, program with a focus on the economy, international school, more sports in the curriculum, general language courses	-	-	-	20.8

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Remarks														
					* Examples are presented in the school intervention columns under Robinson et al. and Hattie.					* There are school interventions concerning the curricula that are so broadly formulated that they do not exhibit parallels with any of the specific factors. These broadly formulated interventions seem to refer to more than one particular curriculum intervention. Therefore, the aggregated effect size that Hattie presents for all 25 factors that together comprise the main factor "the curricula" is assigned to these interventions.				

SYSTEMIC PATHWAYS (N=28)
This subdomain consists of interventions concerning the systemic pathways through the education system that transcend the boundaries of regular school tracks and moments of assessment or examination.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
										Accelerated tracks	Acceleration	0.88	5	10.7
										Summer school	Summer school	0.23	98	7.1
										Courses offered on higher level	Enrichment	0.39	68	3.6
										Fully tracked first year	Ability grouping	0.12	121	3.6
Type B: School intervention analogous to a relatively general effectiveness factor														
All interventions in this subdomain*	Planning, coordinating, and evaluating teaching and the curriculum	0.42	2	100	All interventions in this subdomain*	Curriculum quality / opportunity to learn**	−0.12	11	100					
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Type D: School intervention not analogous to an effectiveness factor														
										State examination, combination of lower and upper vocational programs, combination of primary and secondary programs*	-	-	-	75.0

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Remarks														
* Examples are presented in the school intervention column under Hattie.					* Examples are presented in the school intervention column under Hattie. ** The "curriculum quality/opportunity to learn" factor is predominantly constructed from subcomponents related to language, mathematics, and science, whereas the interventions in this subdomain are, by nature, systemic (i.e., transcending individual subjects). Analogies are identified for the factor's following sub-components (Scheerens 2016, 122-123): "The importance of a good range of extra-curricular activities for the school's effectiveness" "Effectiveness of the curriculum's coordination within the school" "Number of lessons per subject matter area" "The extent to which a curriculum is modern" Most of the factor's subcomponents are not applicable to the interventions in this subdomain.								

LEARNING ENVIRONMENTS (N=89)
This subdomain consists of interventions concerning the learning environment and the methods and tools, including digitalization, used for teaching, learning, and assessment.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
										iPad class, bring your own device (BYOD), classroom laptops, laptop/tablet-oriented education, electronic learning environment, information technology applications	Computer assisted instruction	0.37	71	75.3
										New approaches to assessment, evaluation of the assessment program	Frequent / effects of testing	0.34	79	20.2
Type B: School intervention analogous to a relatively general effectiveness factor														
New approaches to assessment, evaluation of the assessment program, new teaching methods	Planning, coordinating, and evaluating teaching and the curriculum	0.42	2	24.7	New approaches to assessment, evaluation of the assessment program	Evaluative potential	−0.047	9	20.2					
					New teaching methods	Curriculum quality / opportunity to learn	−0.12	11	4.5					

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
iPad class, BYOD, classroom laptops, laptop/tablet-oriented education, electronic learning environment, information technology applications	Selecting, developing, and using smart tools	-	-	75.3										
Type D: School intervention not analogous to an effectiveness factor														
					iPad class, BYOD, classroom laptops, laptop/tablet-oriented education, electronic learning environment, information technology applications*				75.3	New teaching methods				4.5
Remarks														
					* A broad interpretation of the "evaluative potential" and "curriculum quality/opportunity" factors suggests that they could apply to all interventions in this subdomain, including those referring to digital applications for teaching, learning, and assessment. However, it is remarkable that neither factor's extensive set of subcomponents contains a reference to digital applications. This is especially the case because the vast majority of school interventions in this subdomain concern digital applications or methods for teaching, learning, and assessment. For this reason, all interventions referring to digital tools or methods for teaching, learning, and assessment are categorized as type D.									

ORGANIZATION

SCHOOL CULTURE (N=21)
This subdomain consists of interventions concerning the school's mission, vision, identity, culture, image (positioning), or strategic policy making.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
										Positive behavior support, 'living values in education'	Values / moral education programs	0.24	94	19.0
Type B: School intervention analogous to a relatively general effectiveness factor														
Recalibrating the school plan, recalibrating the school mission, recalibrating the school vision, policy development, re-profiling, non-smoking school, re-profiling the school, interventions related to school image	Establishing goals and expectations	0.42	2	76.2	Recalibrating the school plan, recalibrating the school mission, recalibrating the school vision, policy development, re-profiling, non-smoking school, change in school culture, positive behavior support, 'living values in education'	School climate*	0.165	3	71.4	Recalibrating the school plan, recalibrating the school mission, recalibrating the school vision, policy development, re-profiling the school, change in school culture	Principals / school leaders	0.36	74	81.0
Change in school culture, positive behavior support, 'living values in education'	Ensuring an orderly and supportive climate	0.27	5	23.8										
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Type D: School intervention not analogous to an effectiveness factor														
					Re-profiling the school, interventions related to school image	-	-	-	28.6					

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Remarks														
					* The subcomponent of the "school climate" factor on which all the identified analogies were based was "shared goals by staff and students." It should be noted, however, that this sub-component represents only one of numerous sub-components, the large majority of which refer to rules, regulations, punishment, reward, conduct, job appraisal, pupil engagement, and relationships among students. Unlike Hattie's seemingly analogous factor, "principals and school leadership," Scheerens' "educational leadership" factor mainly referred to elements of instructional and administrative leadership. As such, this factor demonstrated few similarities with those interventions related to school culture.								

ORGANIZATIONAL STRUCTURES (N=38)
This subdomain consists of interventions concerning the school's organizational structure(s).

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
Type B: School intervention analogous to a relatively general effectiveness factor														
Staff-related structural interventions, e.g., changing or improving the organizational model (team or management), redistributing staff across the various teams, more autonomy on the team level	Resourcing strategically	0.31	4	65.8	Staff-related structural interventions, e.g. changing or improving the organizational model (team or management), redistributing staff across the various teams, more autonomy on the team level	Educational leadership*	–0.045	8	65.8	All interventions in this subdomain*	Principals / school leaders	0.36	74	100
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Organization-related structural interventions, e.g., cooperation with other secondary schools and the clustering/merging of locations	Creating educationally powerful connections	-	-	34.2										
Type D: School intervention not analogous to an effectiveness factor														
					Organization-related structural interventions (e.g., cooperation with other secondary schools and the clustering/ merging of locations)	-	-	-	34.2					
Remarks														
					* The interventions relate to the factor's subcomponents "orchestrator of participative decision-making" and "counsellor and quality controller of classroom teachers."					* Examples are presented in the school intervention columns under Robinson et al. and Scheerens.				

ORGANIZATION OF EDUCATION (N=21)

This subdomain consists of interventions concerning the rules, procedures, and regulations related to the organizational design of education.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
										Tracking procedures	Ability grouping	0.12	121	9.5
										Exam re-sits	Frequent / effects of testing	0.34	79	4.8
										More teachers distributed across more groups	Co- / team teaching	0.19	111	4.8
Type B: School intervention analogous to a relatively general effectiveness factor														
Procedures regarding promotion and retaking classes, tracking procedures, exam re-sits	Establishing goals and expectations	0.42	2	61.9	Procedures regarding promotion and retaking classes,* exam re-sits**	Evaluative potential	–0.047	9	61.9					
Planning/changing course hours, planning/changing learning periods, reform of the traditional class structure, tracking procedures, more teachers distributed across more groups	Ensuring an orderly and supportive environment	0.27	5	38.1	Planning/changing course hours, planning/changing learning periods	Effective learning time**	–0.139	12	28.6					
					Reform of the traditional class structure, tracking procedures, more teachers distributed across more groups	Teaching strategy (structured, direct)****	0.094	4	9.5					
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type D: School intervention not analogous to an effectiveness factor														
										Planning/ changing course hours, planning/ changing learning periods, procedures regarding promotion and retaking classes	-	-	-	81.0
Remarks														
					* The interventions relate to the factor's subcomponents "(written) rules for promotion to the next year/retention yes/no" and "decision on promotion/retention based on opinion teacher." ** The interventions relate to the factor's subcomponents "a lesson consists of how many minutes" and "number of lessons on timetable per school year." *** The interventions relate to the factor's subcomponent "agreement and/or rules at school level with respect to testing/ registration." **** The interventions relate to the factor's subcomponents "grouping pupils within classes" and "selecting pupils for teaching programmes (enrichment/remediation)", and "differentiation" (component "general orientation").								

QUALITY ASSURANCE (N=43)

This subdomain consists of interventions concerning all systemic activities related to meeting quality requirements and goals regarding services, activities, and products. This subdomain includes the use of research as an evaluation method, as well as outcomes or results based working approaches.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
										Outcome-based working approach, result-based working approach, individualized education program, group (class) plans	Goals*	0.56	34	37.2
Type B: School intervention analogous to a relatively general effectiveness factor														
Improvement programs for better educational outcomes, improvement plans for individual teams	Establishing goals and expectations	0.42	2	62.8	All interventions in this subdomain*	Evaluative potential**	−0.047	9	100					
Outcome-based working approach, result-based working approach, the introduction of a data team, monitoring social-emotional development, improvement programs for better educational outcomes	Planning, coordinating, and evaluating teaching and the curriculum	0.42	2	16.3										
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Student portfolios, student tracking system, group (class) plans	Selecting, developing, and using smart tools	-	-	20.9										

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type D: School intervention not analogous to an effectiveness factor														
										Interventions that predominantly concern goals at the organization-level and interventions that do not directly concern goals,** e.g., the plan-do-check-act cycle, staff meetings about student progress, improvement programs for better educational outcomes, the introduction of a data team, monitoring social-emotional development, student portfolios, student tracking system	-	-	-	62.8
Remarks														
					* Examples are presented in the school intervention columns under Robinson et al. and Hattie. ** The following interventions demonstrate similarities with the "evaluative potential" and "structured instruction" (component "monitoring") factors: outcome-based working approach, result-based working approach, individualized education program, student tracking system, and group (class) plans. The fact that similar components underlay different factors makes interpreting the effect sizes somewhat challenging.					* This factor concerns goals at the student level, rather than at the organization level. ** There are no analogous factors for interventions related to monitoring-related activities that do not involve direct goal-setting.				

STUDENT CARE AND SUPPORT (N=38)
This subdomain consists of interventions concerning student-oriented care, guidance, or support.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
					Interventions concerning inclusive education and care and support	Differentiation*	−0.1	10	92.1	Interventions concerning educational aspects of inclusive education	Mainstreaming	0.28	92	10.5
										Interventions concerning mentoring	Mentoring	0.15	120	7.9
Type B: School intervention analogous to a relatively general effectiveness factor														
All interventions in this subdomain*	Resourcing strategically**	0.31	4	100	Interventions concerning mentoring	School climate**	0.165	3	7.9					
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Type D: School intervention not analogous to an effectiveness factor														
										Interventions concerning inclusive education's care and support structure (rather than educational aspects of inclusive education), such as developing additional care and support for pupils with special needs, introducing student coaching, and more elements of the support structure in classrooms	-	-	-	81.6

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Remarks														
* Examples are presented in the school intervention columns under Scheerens and Hattie. ** The analogy is based on the remark that "this dimension is not about securing resources per se but about securing and allocating resources *that are aligned to pedagogical purposes"* (Robinson et al., 2009, p. 41, italics in original).					* The interventions relate to the factor's component "special attention for pupils at risk." ** The interventions relate to the factor's sub-component "relationship between teacher and pupil."									

STAKEHOLDER RELATIONSHIPS (N=16)

This subdomain consists of interventions concerning the relationships with or involvement of the school's stakeholders, such as parents, primary and tertiary education institutes, other secondary schools, the (local) community, and (local) industry.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
					Interventions concerning parental involvement	Parental involvement	0.18	2	18.6	Interventions concerning parental involvement	Parental involvement	0.51	45	18.6
Type B: School intervention analogous to a relatively general effectiveness factor														
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
All interventions in this subdomain*	Creating educationally powerful connections	-	-	100										
Type D: School intervention not analogous to an effectiveness factor														
					Interventions concerning relations with stakeholders other than parents, such as primary and tertiary education institutes, the business, community, and other secondary schools	-	-	-	81.4	Interventions concerning relations with stakeholders other than parents, such as primary and tertiary education institutes, the business, community, and other secondary schools	-	-	-	81.4
Remarks														
* Examples are presented in the school intervention columns under Scheerens and Hattie.														

FINANCIAL RESOURCES (N=4)*
This subdomain consists of interventions concerning the school's financial resources.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
Type B: School intervention analogous to a relatively general effectiveness factor														
Drafting a new financial framework, improving the financial situation, aiming for 'healthy' finances	Resourcing strategically	0.31	4	100						Drafting a new financial framework, improving the financial situation, aiming for 'healthy' finances	Finances	0.23	99	100
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Type D: School intervention not analogous to an effectiveness factor														
					All interventions in this subdomain*	-	-	-	100					
Remarks														
* This subdomain contains only 4 interventions.					* The factor "educational leadership" mainly refers to components of instructional and administrative leadership (e.g., the school leader as an information provider, orchestrator of participative decision making, meta-controller of classroom processes, and initiator and facilitator of staff professionalization efforts). Financial elements are not among this category's subcomponents.									

FACILITIES AND ACCOMMODATION (N=4)*
This subdomain consists of interventions concerning the school's facilities or accommodation(s).

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
Type B: School intervention analogous to a relatively general effectiveness factor														
Construction of a new building, Wi-Fi network	Resourcing strategically	0.31	4	50	Construction of a new building, Wi-Fi network, new scheduling program, lean board	School climate*	0.165	3	100					
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
New scheduling program, lean board	Selecting, developing, and using smart tools	-	-	50										
Type D: School intervention not analogous to an effectiveness factor														
										All interventions in this subdomain*	-	-	-	100
Remarks														
* This subdomain contains only 4 interventions.					* The interventions relates to the factor's component "facilities and buildings."					* Examples are presented in the school intervention columns under Robinson et al. and Scheerens.				

STAFF

PROFESSIONAL AUTONOMY AND CULTURE (N=73)

This subdomain consists of interventions concerning the staff's professional autonomy or professional culture (behavior). This domain includes training and development activities intended to increase the level of staff professionalism (capacity building).

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
Type B: School intervention analogous to a relatively general effectiveness factor														
Staff development project, staff training programs, stimulation of an 'inquisitive' mentality among teachers, professional organization/culture/autonomy, competence-based management	Promoting and participating in teacher learning and development	0.84	1	53.4	Staff development project, staff training programs, stimulation of an 'inquisitive' mentality among teachers, professional organization/culture/autonomy, competence-based management, professionalization of school leadership	Educational leadership*	−0.045	8	45.2	Staff development project, staff training programs, peer (teacher) feedback, peer reflection, peer intervision, cooperation within professional learning communities, on-the-job learning from peers	Professional development*	0.62	19	76.7
Peer (teacher) feedback, peer reflection, peer intervision, cooperation within professional learning communities, on-the-job learning from peers	Planning, coordinating and evaluating teaching and the curriculum	0.42	2	45.2	Peer (teacher) feedback, peer reflection, peer intervision, cooperation within professional learning communities, on-the-job learning from peers	Consensus and cohesion among staff**	0.038	5	54.8	Professional organization/culture/autonomy, competence-based management, professionalization of school leadership	Principals / school leaders	0.36	74	23.3
Professionalization of school leadership*	Resourcing strategically	0.31	4	1.4										

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Type D: School intervention not analogous to an effectiveness factor														
Remarks														
* The factor "promoting and participating in teacher learning and development" solely focuses on teacher learning. Consequently, the intervention professionalization of school leadership demonstrates the closest links with the factor "resourcing strategically."					* The interventions relate to the component "initiator and facilitator of staff professionalization." ** The interventions relate to the component "importance attributed to cooperation."					* The "professional development" factor only refers to teacher-related professional development and does not pertain to the school staff at large, including (non-teaching) school leadership and staff members in supportive functions.				

TEACHING AND SCHOOL RELATED ASSIGNMENTS (N=19)
This subdomain consists of interventions concerning the distribution of teaching and other school-related duties and assignments.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
Type B: School intervention analogous to a relatively general effectiveness factor														
Recalibrating policies regarding the distribution of teaching and other school-related duties and assignments, job-matching	Resourcing strategically	0.31	4	100	Recalibrating policies regarding the distribution of teaching and other school-related duties and assignments, job-matching	School climate*	0,165	3	100					
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Type D: School intervention not analogous to an effectiveness factor														
										All interventions in this subdomain*	-	-	-	100
Remarks														
					* The interventions relate to the factor's component "appraisal of roles and tasks."					* Examples are presented in the school intervention columns under Robinson et al. and Scheerens.				

STAFFING POLICY (N=18)
This subdomain consists of interventions concerning staffing policy, assessment, and financial compensation.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
Type B: School intervention analogous to a relatively general effectiveness factor														
All interventions concerning the (performance management) review cycle/periodic assessment interview	Promoting and participating in teacher learning and development	0.84	1	61.1	All interventions concerning the (performance management) review cycle/ periodic assessment interview	Evaluative potential*	–0.047	9	61.1					
Recalibrating the staffing policy, renewal of reward (payment) policies, new reward system	Resourcing strategically	0.31	4	38.9	Recalibrating the staffing policy, renewal of reward (payment) policies, new reward system	School climate**	0.165	3	38.9					
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Type D: School intervention not analogous to an effectiveness factor														
										All interventions in this subdomain*	-	-	-	100
Remarks														
					* The interventions relate to the factor's component "school process evaluation." ** The interventions relate to the factor's subcomponent "job appraisal in terms of facilities, conditions of labour, task load and general satisfaction."					* Examples are presented in the school intervention columns under Robinson et al. and Scheerens.				

RECRUITMENT AND EMPLOYMENT (N=4)*
This subdomain consists of interventions concerning recruitment or employment.

School intervention	Factor from Robinson et al. (2009)	E	R	%	School intervention	Factor from Scheerens (2016)	E	R	%	School intervention	Factor from Hattie (2009)	E	R	%
Type A: School intervention analogous to a relatively specific effectiveness factor														
Type B: School intervention analogous to a relatively general effectiveness factor														
Employing new staff members, recruiting staff with a university background, dismissing low-performing staff members	Resourcing strategically	0.31	4	100										
Type C: School intervention analogous to a relatively general effectiveness factor without an effect size														
Type D: School intervention not analogous to an effectiveness factor														
					All interventions in this subdomain*	-	-	-	100	All interventions in this subdomain*	-	-	-	100
Remarks														
* This subdomain contains only 4 interventions.					* The "educational leadership" factor does not refer to activities concerning recruitment and employment. Examples are presented in the school intervention column under Robinson et al.					* Examples are presented in the school intervention column under Robinson et al.				

Appendix C (Chapter 4) | Interview protocol

Part I: Personal, organizational, and societal characteristics
Please orally provide the following personal, organizational, and societal characteristics.

Personal characteristics
Age
Number of school locations under responsibility
Years of school leader experience
Years of school leader experience at current school
Years of teaching experience
Education (initial)
School leader training
Recent professional training activities
Participation in professional network(s)
Own children in secondary education (currently or previously)

Organizational characteristics
Location
Denomination
Education concept
Available tracks
Student number
Trend in student numbers
Size of the school board
Management structure of the school
Assessment judgement by the Inspectorate of Education

Societal characteristic
Demography (local)

Part II: Interview questions

I. Personal beliefs

a. How and when did you become a school leader?
b. Was it your ambition to become a school leader, or did you become one by chance?
c. What images did you have of school leadership?
d. What are your personal motives and/or values in your school leadership?
e. Where in your school leadership do personal motivations and values express themselves?
f. How do your personal motives and/or values relate to the mission, vision, and goals of your school?
    i. In case of a relation: Have you searched for a school that fits your personal motives and/or values or have they aligned with those of the school?
    ii. In case of a weak relationship or non-relationship: What consequences does this have for
        1. your school leadership?
        2. the school?
    iii. In case of a weak relationship or non-relationship: Have you searched for a school that fits your personal motives and /or values better?

II. Differentiation intervention

a. What were the main reasons that you pursued the differentiation intervention?
b. Was there one obvious reason and/or critical incident?
c. What do you hope to achieve with this intervention?
d. Did you consider alternative interventions for the same reasons and objectives?
    i. If so, what made you choose this intervention and not the alternative intervention(s)?
e. Did your personal motives and/or values play a role in the decision to start the intervention?
f. What other factors influenced your choice of this specific intervention?
g. Was it mainly personal, organizational, or societal factors that guided your decision to pursue the intervention?
h. Who raised the idea to initiate this intervention?
i. Who took the final decision to start this intervention?
j. Who was involved in the decision-making process?

III. School interventions in general

a. Do your answers to the last six questions apply specifically to the differentiation intervention or to other (recent) school intervention decisions as well?
b. How do your personal motives and /or values affect your school intervention decisions?
c. What other factors influence your school intervention decisions?
d. Is it mainly personal, organizational, or societal factors that guide your school intervention decisions?
e. Who introduces ideas to start school intervention decisions?
f. Who makes the final decision to start school interventions?
g. Who is involved in school intervention decision-making?
h. Do you ever make a school intervention decision for uncertain reasons (not based on knowledge, facts, or evidence) but nonetheless feel certain you made the right decision?

Part III: Factor list

a. Please score the following list of personal, organizational, and societal factors (see Appendix D) regarding both your decision to pursue the specific differentiation intervention and your school intervention decisions in general according to the following scale:
    1. This factor did not influence my intervention choice(s).
    2. This factor had a small influence on my intervention choice(s).
    3. This factor had a big influence on my intervention choice(s).
    4. This factor had an essential influence on my intervention choice(s).
b. Please explain any score if relevant.
c. Are there any factors that influence your school intervention decision and that are not included in the list?
    i. If so, what are they? Please score according to the same scale.

Final question

Is there anything you would like to add in line with the interview topics that was not discussed or that was insufficiently discussed?

Appendix D (Chapter 4) | Factor list

Name		Name school	
Function		Date	

1 = This factor did **not** influence my intervention choice(s).
2 = This factor had a **small** influence on my intervention choice(s).
3 = This factor had a **big** influence on my intervention choice(s).
4 = This factor had an **essential** influence on my intervention choice(s).

Please circle your score. If an item does not apply to your situation, put a cross in the column N.A. (not applicable).

Factors	**N.A.**	**Influence on differentiation intervention decision**	**Influence on school intervention decisions in general**
Personal			
Age		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Sex		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Number of school locations under responsibility		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Years of school leader experience		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Years of school leader experience at current school		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Years of teaching experience		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Education (initial)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
School leader training		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Recent professional training activities		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Participation in professional network(s)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Own children in secondary education (currently or previously)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Motives (in school leadership)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Values (in school leadership)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Biography (life course)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Practical knowledge and experience		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Intuition		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Other, namely…		1 - 2 - 3 - 4	1 - 2 - 3 - 4

Factors	**N.A.**	**Influence on differentiation intervention decision**	**Influence on school intervention decisions in general**
Organizational			
Location		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Denomination		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Education concept		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Available tracks		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Student number		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Trend in student numbers		1 - 2 - 3 - 4	1 - 2 - 3 - 4

Size of the school board	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Management structure of the school	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Supervisory council	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Participation council	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Mission statement	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Image	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Public relations	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Continuity	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Finances	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Employee satisfaction	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Employee competences and professionality	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Employee work capacity	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Student council	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Student satisfaction	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Student population (complexity)	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Parent council	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Parent satisfaction	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Assessment judgement by the Inspectorate of Education	1 - 2 - 3 - 4	1 - 2 - 3 - 4
School data	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Buildings and facilities	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Policy initiatives of the school board	1 - 2 - 3 - 4	1 - 2 - 3 - 4
Other, namely…	1 - 2 - 3 - 4	1 - 2 - 3 - 4

Factors	**N.A.**	**Influence on differentiation intervention decision**	**Influence on school intervention decisions in general**
Societal			
Demography (local)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Good practices of other secondary education school(s)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
“Competing” secondary education school(s)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Partnership of schools for inclusive education		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Schools for primary education (local)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Schools for tertiary education (local)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Local facilities		1 - 2 - 3 - 4	1 - 2 - 3 - 4
National policy initiatives		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Policy initiatives by national interest organizations		1 - 2 - 3 - 4	1 - 2 - 3 - 4
National facilities		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Assessment framework of the Inspectorate of Education		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Available subsidies		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Research evidence		1 - 2 - 3 - 4	1 - 2 - 3 - 4
National benchmarks		1 - 2 - 3 - 4	1 - 2 - 3 - 4
International benchmarks		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Demography (local)		1 - 2 - 3 - 4	1 - 2 - 3 - 4
Other, namely…		1 - 2 - 3 - 4	1 - 2 - 3 - 4

Appendix E (Chapter 4) | Table mean scores, standard deviations, and number of respondents for the 16 factors at the personal level

Personal factors	Choice for differentiation intervention			Intervention choices in general		
	μ	SD	N	μ	SD	N
Age	2.3	1.1	10	2.1	1.2	10
Sex	1.4	0.7	10	1.5	0.7	10
Number of school locations under responsibility	1.8	1.2	9	2.0	1.2	9
Years of school leader experience	2.6	0.8	10	2.7	0.9	10
Years of school leader experience at current school	2.5	0.7	10	2.3	0.7	10
Years of teaching experience	2.4	1.3	10	2.6	1.3	10
Education (initial)	2.3	1.1	10	2.6	1.2	10
School leader training	2.3	1.0	9	2.8	0.8	9
Recent professional training activities	2.3	1.1	7	2.9	1.1	7
Participation in professional network(s)	2.9	0.9	10	2.9	0.7	10
Own children in secondary education (currently or previously)	2.4	1.2	9	2.0	0.9	9
Motives (in school leadership)	3.8	0.4	10	3.8	0.4	10
Values (in school leadership)	3.7	0.5	10	3.9	0.3	10
Biography (life course)	3.0	1.1	10	3.2	0.9	10
Practical knowledge and experience	3.2	0.6	10	3.4	0.5	10
Intuition	3.1	1.0	10	3.2	0.8	10

Appendix F (Chapter 4) | Table mean scores, standard deviations, and number of respondents for the 27 factors at the organizational level

Organizational factors	Choice for differentiation intervention			Intervention choices in general		
	μ	SD	N	μ	SD	N
Location	2.6	1.1	10	2.6	1.1	10
Denomination	1.6	0.8	10	1.6	0.8	10
Education concept	2.0	1.2	10	1.8	0.9	10
Available tracks	2.3	1.5	10	2.3	1.3	10
Student number	1.8	1.2	10	1.8	1.2	10
Trend in student numbers	2.2	1.1	10	2.3	1.3	10
Size of the school board	1.3	0.7	9	1.3	0.7	9
Management structure of the school	2.4	1.2	10	2.5	1.2	10
Supervisory council	2.0	0.9	10	1.9	0.9	10
Participation council	2.0	0.9	10	1.8	0.9	10
Mission statement	3.6	0.5	10	3.5	0.7	10
Image	2.9	0.6	10	3.1	0.6	10
Public relations	2.5	1.1	10	2.4	0.9	10
Continuity	2.7	1.0	10	3.0	0.8	10
Finances	1.9	1.1	10	2.6	1.0	10
Employee satisfaction	2.5	1.0	10	2.5	1.0	10
Employee competences and professionality	3.2	0.6	10	3.2	0.6	10
Employee work capacity	2.9	0.7	10	2.7	0.8	10
Student council	1.8	1.0	10	1.8	1.0	10
Student satisfaction	2.3	1.2	10	2.6	1.2	10
Student population (complexity)	2.6	1.2	10	2.5	1.2	10
Parent council	1.7	0.7	9	1.8	0.8	9
Parent satisfaction	2.0	1.1	10	2.2	1.0	10
Assessment judgement by the Inspectorate of Education	1.8	0.9	10	1.7	0.8	10
School data	2.4	1.1	10	2.8	0.9	10
Buildings and facilities	2.3	1.4	10	2.7	1.3	10
Policy initiatives of the school board	2.1	1.1	8	2.4	0.9	8

Appendix G (Chapter 4) | Table mean scores, standard deviations, and number of respondents for the 16 factors at the societal level

Societal factors	Choice for differentiation intervention			Intervention choices in general		
	μ	SD	N	μ	SD	N
Demography (local)	2.3	1.1	10	2.5	1.1	10
Good practices of other secondary education school(s)	2.7	0.9	10	2.6	1.0	10
"Competing" secondary education school(s)	2.5	1.0	10	2.6	0.8	10
Partnership of schools for inclusive education	1.7	0.9	10	2.1	1.2	10
Schools for primary education (local)	2.2	0.9	10	2.4	1.1	10
Schools for tertiary education (local)	2.5	1.0	10	2.7	0.9	10
Local facilities	1.6	0.9	8	1.8	0.9	8
National policy initiatives	2.2	1.2	10	2.5	1.2	10
Policy initiatives by national interest organizations	2.0	0.8	10	2.1	0.7	10
National facilities	1.9	1.0	10	1.8	0.8	10
Assessment framework of the Inspectorate of Education	2.4	1.1	10	2.8	0.9	10
Available subsidies	1.7	1.1	10	1.8	1.0	10
Research evidence	2.2	0.9	10	2.4	0.8	10
National benchmarks	1.4	0.7	10	1.5	0.7	10
International benchmarks	1.5	0.8	10	1.5	0.8	10

Acknowledgements

This dissertation aimed to display how school leaders actually use their decision-making responsibilities in school practice. This ambition could never have been pulled off without the insights, beliefs, considerations, and experiences of school leaders themselves. Therefore, I am very thankful to all school (board) leaders who shared their practices and reflections with me. Your willingness and enthusiasm to participate in the studies enabled this empirical dissertation.

Gratitude also to my supervisors. Lex and Trudie, thank you for enabling this PhD project in the first place. Though my professional background and research approach did not make an obvious match with the research group, you showed confidence in me from our first encounter. Besides your valuable reflections on my work, I am very appreciative of the autonomy and opportunities you gave me throughout the years. Sietske, thank you for your enthusiasm to join this venture at the outset and your holistic support since. You identified moments of scientific doubt at distance and helped me progress in challenging times. I value our professional discussions highly and deeply appreciate your personal commitment.

I have been privileged to present my work-in-progress at many (inter)national educational research conferences. Discussing my research at these conferences always provided me with fresh encouragement and inspiration to continue my work back home. I am thankful to all colleagues who have provided me with insights from their work and shared their reflections on mine. Throughout the years, I have very much enjoyed collaborating with 'likeminded', both professionally and socially.

An individual word of thanks to various personages along the crusade. Jo, for stimulating me to start a PhD in the first place. I cherish our animated conversations about education policy over many lunches and dinners throughout the years. Leo, for consistently making me return to my original research purposes and attitude. Jane, for your care and native backing. Samir, for your creative expertise. My paranymphs Elise and Livia, for your professional and personal support.

Mom and dad, I am very grateful for your continuous care and support over the years and for providing me with the fundaments of my being. Unconventional choices make life engaging. Beautiful Julie † and Anouk, thank you for the myriad of joyful moments you gave me in between incessant occupations. You brought unconditional light, laughter, and love in strenuous years.

A final heartfelt thank you to everyone—family, friends, and colleagues—who was there for me when the world darkened.

Annemarie Neeleman
Delft, June 2019

Curriculum Vitae

Annemarie Neeleman was born on 29 September 1980 in Delft, the Netherlands. She graduated from Stanislascollege Delft in 1998. At the University of Amsterdam, she finished her propaedeutics in both Spanish Language & Literature and English Language & Literature. During her master's program European Studies, she successfully attended the University of Alcalá de Henares (Spain) for one course year. In 2005 she obtained her master's degree in European Studies with a comparative analysis of the portrayal of Michael Collins in the British and Irish press.

After her graduation, Annemarie held various positions in the educational sector, among which that of conference manager and senior consultant. In the summer of 2013, Annemarie joined a research project at Maastricht University on the long-range educational research agenda for the Dutch province of Limburg. In this project, an active dialogue between educational research and practice was the starting point of all activities. Mid 2014—fascinated by the interplay between educational research, policy making, and practice—she started her dissertation research at Maastricht University into the use of school autonomy by Dutch secondary school leaders. She published her work in a variety of journals, both academic and professional. She presented her research at various (inter)national conferences, among which the annual meetings of the American Educational Research Association (2018), the European Educational Research Association (2016-2018), the International Congress for School Effectiveness and Improvement (2016-2018), the European Association for Practitioner Research on Improving Learning (2014), the British Educational Leadership, Management, and Administration Society (2017), and the (Dutch) Educational Research Days (2015, 2017). In 2016, she was visiting scholar at the Institute of Education, University College London.

Besides her PhD research, Annemarie has been working as an independent researcher and policy advisor for schools, school boards, sector organizations, and local and national authorities. Since 2014, she coordinates professional learning networks for female school (board) leaders. In 2017, the Dutch Council for Secondary Education invited her to develop and teach a course for school leaders to improve their research skills. Annemarie is a frequent speaker at professional conferences and seminars. She is editor-in-chief of *SchoolManagement*, a professional journal for school (board) leaders.

