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The relationship between leadership and the sustainability of data use

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Abstract

Data use plays an important role in education, since it enables teachers to make informed decisions about educational practices. In schools, however, decisions are often based on experience and intuition instead of on data. Therefore, a data use intervention was developed to train teachers in their knowledge and skills for data use. For such an intervention to succeed, sustainability is of importance. Sustainability refers to continuation; something that endures over time. A key factor that influences sustainability is leadership. However, the relationship between leadership and sustainability is not yet clear. This qualitative study therefore investigated the relationship between transformational and distributed leadership and the sustainability of data use. In order to investigate this relationship, two primary schools in the Netherlands that worked with the aforementioned data use intervention were selected. Semi-structured interviews with teachers and a school leader were held, and an additional document study was carried out. The results of this study showed that sustainability for the data use intervention was partly achieved at both schools, which seems to be related to leadership behavior. Both school leaders showed good transformational and distributed leadership in some areas, positively influencing sustainability, but fell short in other areas. Therefore, for both school leaders it can be concluded that further development of leadership is likely to lead to a higher degree of sustainability for data use.

Keywords: sustainability, data use intervention, data use, transformational leadership, distributed leadership.

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1.1 Introduction

Schools are required by law to continually work on the improvement of their education (Inspectie van het Onderwijs, 2018), allowing students to get the most optimal education in a society that is increasingly complex and constantly in motion. To enhance student performance and to further develop education, schools in the Netherlands claim to make decisions based on data (Inspectie van het Onderwijs, 2018). This process is referred to as *data based decision making*, or in short *data use* (e.g. Schildkamp & Kuiper, 2010; van der Kleij, et al., 2015; van Geel et al., 2016). Data in a school context can be defined as “information that is collected and organized to represent some aspect of schools” (Lai & Schildkamp, 2013, p. 10), and can be used to improve the quality of education. Examples of these data are student achievement scores, students’ final grades, school policy documents, school inspection data, school self-evaluation data, and observations of classroom teaching (Gelderblom, Schildkamp, Pieters, & Ehren, 2016; Schildkamp & Kuiper, 2010; Hubers, Schildkamp, Poortman, & Pieters, 2017).

Several studies have shown data use to be effective for school development and student achievement (e.g. Earl & Katz, 2006; Poortman & Schildkamp, 2016; Van Geel, Keuning, Visscher, & Fox, 2016), and data therefore gets a more prominent role in developing educational policy. The aim of the Dutch Ministry of Education Culture and Science for 2018 is that at least 90% of primary and secondary schools engage systematically in data use for school development (Inspectie van het Onderwijs, 2011) whereas in schoolyear 2016/2017 75% of the secondary schools effectively used data (Inspectie van het Onderwijs, 2018).

In schools, decisions are often based on experience or intuition instead of on data (Datnow, Park, & Kennedy-Lewis, 2012; Fullan, 2007; Schildkamp & Kuiper, 2010), which can lead to ineffective and costly adjustments of existing school development initiatives (e.g. Earl & Katz, 2006). Explanations for ineffective or superficial data use, are teachers’ and school leaders’ lack of knowledge and skills for data use, which is referred to as *data literacy*, a lack of teacher collaboration, lack of a clear vision and goals regarding to data use, and a negative attitude towards data use (Earl & Katz, 2006; Lai & Schildkamp, 2013; Marsh, 2012; Schildkamp & Kuiper, 2010; Schildkamp & Poortman, 2015). To address this problem and to promote data use within schools, Schildkamp et al. (2014a) developed a data use intervention, which has proven to be effective (Ebbeler, 2016; Ebbeler, Poortman, Schildkamp, & Pieters, 2016; Gelderblom, 2018; Poortman & Schildkamp, 2016; Schildkamp & Poortman, 2015). In this intervention teachers get external support for (the implementation of) data use with the goal to make informed decisions about educational practices for school improvement. After termination of external support it is of crucial importance that the use of the data use intervention is continued. Most problems addressed by this method are complex, hence ask for a longer support period (Schildkamp et al., 2014a). Moreover, solutions of most interventions tend to stay superficial without continuation (Fullan, 2007) and will therefore not result in the changes they are designed for. When speaking of a lasting change or intervention, the term *sustainability* is used (Fullan, 2007).

One of the key factors that affects sustainability is leadership. Fullan (2007) suggests that the school leader is key to success for implementing an intervention. The school leader should among other things, motivate, and support teachers to work on a change. The school leader is thereby responsible for the right school culture with its norms and expectations, ways of collaboration, and the facilitation of the educational change (Fullan, 2007; King, 2016; Leithwood, Harris, & Hopkins, 2008; Schildkamp et al., 2014a). Despite the suggestion that the school leader plays a key role in educational changes, his role in relation to sustainability of data use is not clear. This research therefore focuses on the relationship between leadership and the sustainability of data use in primary schools in the Netherlands that participated in the data use intervention.

1.2 Theoretical framework

In this chapter the data use intervention, and the constructs: data use, sustainability, transformational leadership, and distributed leadership are described. The chapter is concluded with the research question.

1.2.1 Data use

Data use is a tool, which can improve the quality of education (Coburn & Turner, 2011; Schildkamp & Poortman, 2015; Spillane, 2012). Data can for instance be used in order to change the learning environment and to meet the learners’ needs (Lai & Schildkamp, 2013; van der Kleij, Vermeulen, Schildkamp, & Eggen, 2015; van Geel et al, 2016). On its own, data does not inform decisions. Gathered

data should first be interpreted and processed into meaningful information before decisions can be made (Coburn & Turner, 2011; Marsh, 2012).

Through data use, teachers become more aware of their actions, which can lead to changed classroom practices in favor of the students (Ebbeler et al., 2016; Gelderblom et al., 2016; Ledoux, Blok, Boogaard, & Krüger, 2009; Schildkamp et al., 2014b; Schildkamp & Kuiper, 2010; van Geel et al., 2016). At this moment, however, data use within secondary and primary schools in the Netherlands mostly stays at a superficial level (Ebbeler et al., 2016; Gelderblom et al., 2016; Gelderblom, 2018; Ledoux et al., 2009; Schildkamp et al., 2014b; Schildkamp & Kuiper, 2010), while several studies have shown a positive effect of data use on student performance or school improvement (e.g. Earl & Katz, 2006; Poortman & Schildkamp, 2016; Schildkamp, et al., 2014b; van Geel et al., 2016). Van Geel et al., (2016) for example found an increase of student achievement growth in mathematics and spelling. After a two year data-based decision making intervention at 53 primary schools in the Netherlands, they found a positive effect of almost an extra month of schooling for students of both low and high SES, regardless of their school's SES.

Teachers and school leaders in primary and secondary schools in the Netherlands, however, use data mainly for monitoring instead of for innovating teaching or school development (Schildkamp & Kuiper, 2010; Schildkamp et al., 2014b). The studies of Gelderblom et al., (2016) and Gelderblom (2018) in Dutch primary education state that teachers try to use data to innovate their teaching, though only when students fail certain subjects. This indicates that teachers attempt to use data, yet often fail to make optimal use of it. In order to learn how to use data effectively, both teachers and school leaders would therefore benefit from more training on the subject.

1.2.2 Data use intervention

With the data use intervention of Schildkamp et al., (2014a), teachers receive support from an external coach for a period of one or two years for (the implementation of) data use. The goals of this intervention are teachers' professional development and school improvement. These goals are reached by training teachers to use data effectively in order to make informed decisions about educational practices and/or existing problems within their schools. With this intervention, a data team is formed which consists of four to six teachers and one or two (assistant) school leaders, that under guidance of an external coach collects, analyzes, and interprets data (Schildkamp et al., 2014a; Schildkamp & Poortman, 2015). They therefore follow the eight cyclical steps of the data use intervention, in which they can go back and forward (see figure 1). After two years, the schools have to maintain the data based decision making process without help of the coach in order to keep improving.

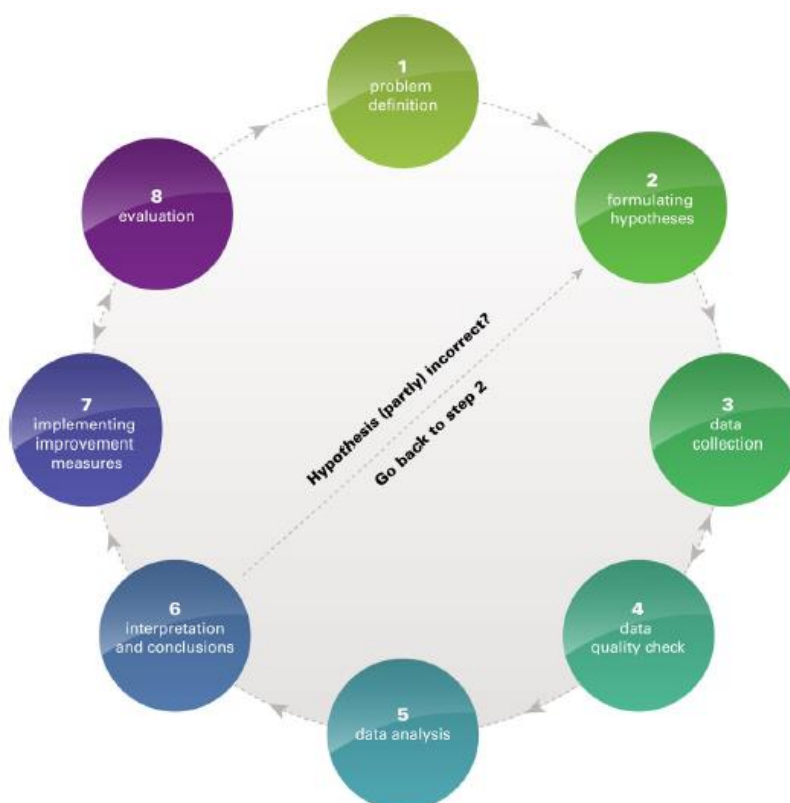


Figure 1. Eight-step method of the data use intervention (Poortman & Schildkamp, 2016, June).

The data use intervention has proven to be beneficial for teachers' data literacy, raised awareness of the benefit of data use for instruction, and in some schools student achievement increased as well (Ebbeler, 2016; Ebbeler et al., 2017; Gelderblom, 2018; Poortman & Schildkamp, 2016; Schildkamp & Poortman, 2015). These studies also indicated that the school leaders' participation was essential for the process and progress of the method. Data teams of schools with supportive school leaders who stressed the importance of data use and had a clear vision, goals, and norms regarding to data use, did better than teams without such leaders (Ebbeler, 2016; Schildkamp & Kuiper, 2010). The support varied from facilitating the data teams with time to work on their problems, to providing individual teacher support. The study of Ebbeler (2016) also highlights the importance of creating an open atmosphere and a flat hierarchy within the school.

1.2.3 Sustainability

As mentioned before, schools that worked with the data use intervention are expected to continue with data use themselves after the external coach has left. This continuation is referred to as sustainability (Fullan, 2007), which is defined in multiple ways within the literature. This study uses the following definition of sustainability, based on Feldman and Pentland (2003), Fullan (2007), Hargreaves and Fink (2003), and Spillane (2012): *Sustainability is achieved when the intervention is evident through both ostensive and performative organizational routines, which are non-disruptive of ongoing work, with the intent of continuous improvement.*

Spillane (2012) argues that in order to sustain data use within schools, norms, values, and expectations regarding data use should be developed and embedded in the school's culture, which can be defined as *organizational routines*. Feldman and Pentland (2003) define organizational routines as "a repetitive, recognizable pattern of interdependent actions, carried out by multiple actors" (p. 95). A distinction can be made between the ostensive and performative aspect of a routine. The ostensive aspect embodies the structure and thus the rules of the routine, whereas the performative aspect of a routine focuses on the practice, and thus on the actions that people involved take at a certain time and place (Feldman & Pentland, 2003). Within a school context, the ostensive aspect could be translated to a school's policy for data use, and the performative aspect as how teachers handle data in practice.

Fullan (2007) argues that sustainability is created through interactions and interrelations between different school levels, namely: the classroom, the school as a whole, and the district. Only through purposeful interaction between individuals of different layers of the organization, the new initiative can be shared and further developed, through which sustainability can be reached. Fullan (2004) therefore points out that it is of importance to maintain and further develop networks within and outside the school. Sustainability signifies also a need for continuous development, which Fullan describes as “continuous improvement consistent with deep values of human purpose” (Fullan, 2004, p. 2). He translates this to commitment to raising the bar of student achievement and closing the existing gap herein, treating people with respect, and trying to continuously improve the educational environment (Fullan 2004, 2005).

Hargreaves and Fink (2003) agree with Fullan in both the aspects of interrelations and interaction between different organizational layers as with the aspect of continuous development. They thereby stress the importance of developing sustainability without doing harm or compromising the development of other already existing initiatives. This implies that the new initiative, in this case data use, should be in alignment with the existing curriculum. Their conception of sustainability also highlights the aspect of leadership and staff succession. They state that “sustainable leadership is a distributed necessity and a shared responsibility” (Hargreaves & Fink, 2003, p. 7). The study of van Geel, Visscher, and Teunis (2017) underlines the importance of sustainable leadership for data use. They concluded that “continuity of three categories of school staff (the school leader, academic coaches, and teachers) were strongly associated with the implementation of DBDM – less mobility among school staff appears to be important for success” (p. 455). Sustainable leadership can be achieved by preparing for leadership succession through developing others, distribution of knowledge, and through distribution of leadership tasks. According to Hargreaves and Fink (2003), staff turnover will be less of a problem for the sustainability of an intervention when a school prepares for leadership succession in this way.

1.2.4. Sustainability and leadership

The school leader is a key factor for the sustainability of educational development (Fullan, 2007; Hargreaves & Fink, 2003). The school leader is responsible for the development of a safe environment for change, promoting the change, motivating teachers to participate in it, for the development of organizational capacity; such as time, money, other necessary resources, and for the development of others within the school (e.g. Crews, 2010; Ebbeler et al., 2016; Edmondson, 1999, 2003; Fullan, 2004, 2007; King, 2016; Leithwood, Harris, & Hopkins, 2008; Schildkamp & Kuiper, 2010; Spillane, 2012).

A safe environment for change is defined as an open school culture in which the process and progress of an intervention can be openly discussed, without people being blamed or shamed for their opinion (Schildkamp & Kuiper, 2010; Edmondson 1999, 2003). In such an environment it is possible for everyone to look critically at data, and to reflect on their own functioning, with as result being open to alter their existing practices when needed (e.g. Schildkamp et al., 2013).

Motivating teachers refers to encouraging teachers to participate in the new intervention. Teachers should become aware of the importance and the content of the data use intervention, and should be actively involved in decision making (Schildkamp et al., 2014a; Stokking, 2002). The chance for teachers to embrace the intervention increases when they understand the importance and the content, and when they have the feeling that they make a difference (Hargreaves, 2004; Stokking, 2002). Additionally, when teachers feel that they have influence on and are part of decision-making processes, the higher the chance that they internalize the school’s goals and vision (Geijsel, Slegers, Stoel, & Krüger, 2009). Teacher engagement is therefore a significant factor to sustain practice over time (King, 2016).

As Fullan (2007) states, a lack of time, space, or money for teacher support has a negative effect on sustainability. Developing organizational capacity is therefore of crucial importance. Teachers should have sufficient time to execute their new tasks, what could be arranged by the school leader, by clearing time in their schedules. Teachers should be provided with space and all the necessary tools to execute their new tasks (e.g. Fullan, 2007; King, 2016). Another example of developing organizational capacity is the support of the school leader for teachers to work collaboratively. Through collaboration between teachers diffusion of practice takes place, which benefits sustainability (King, 2016).

Development of others refers in this case to grooming teachers’ skills and knowledge about data use. This can be achieved with a form of training like the data use intervention (Schildkamp et al.,

2014a). Through development of others, the school will be able to continue the educational change in case of staff turnover (Hargreaves & Fink, 2003). In addition, the division of organizational tasks becomes possible, which benefits the school leader. It is impossible for him to carry out all organizational tasks within the school (Fullan, 2007; Spillane, 2005).

Over the last decades, multiple definitions and forms of leadership have been discussed. In this research transformational leadership and distributed leadership will be discussed, because they fit in with sustainability. Transformational leadership can be linked to sustainability, because it is a form of leadership where the leader motivates the persons around him, has a strong vision with corresponding goals, and for the reason that a transformational leader strives for a collaborative school culture (e.g. Leithwood & Jantzi, 1999, 2005). These traits connect very well with the prerequisites of an educational change. Distributed leadership will be discussed, since it stresses the importance of multiple persons in a leadership role and the distribution of knowledge (e.g. Copland, 2003; Elmore, 2000; Spillane, Halverson, & Diamond, 2001; Hargreaves & Fink, 2003; Woods, Bennet, Harvey, & Wise, 2004). This connects very well with sustainability and its call for collaboration and distribution of knowledge.

1.2.5 Transformational leadership

1.2.5.1. Definition of transformational leadership

Definitions of transformational leadership developed over the years and have a certain overlap with each other: there is no single agreed-upon definition. Therefore, a literature review was conducted through which the definition can be specified to the following: *Transformational leadership is a form of leadership where the leader – in order to develop the organization – voices his expectations, tries to encourage and motivate his employees to meet these expectations, pays interest in their needs, and intellectually stimulates them* (based on: Avolio, Bass, & Jung, 1999; Bass, 1990; Leithwood, Aitken, & Jantzi, 2001; Leithwood & Jantzi, 2005; Leithwood & Sun, 2012; Leithwood & Riehl, 2005; Silins, 1994).

To transform, essentially, means to change. A transformational leader aims at innovating and improving the organization through development of others (Gold, Evans, Early, Halpin, & Collarbone, 2003; Harris, 2005b; Leithwood & Sun, 2012). A transformational leader therefore recognizes the followers’ needs and tries to meet those (Silins, 1994). When teachers’ attitudes and beliefs are negative towards the change, he tries to alter these attitudes and beliefs. A transformational leader also offers support to let people look critically at their own behavior, and encourages them to see their own potential. Through adequate support, development of a shared vision, facilitation of learning, and encouragement, teachers become more engaged with, and motivated to reach the organizational goals (e.g. Leithwood & Sun, 2012; Wang et al., 2011).

The foundation of transformational leadership can be found in the studies of Burns (1978) and Bass (1985). Bass (e.g. 1990) originally developed a seven-factor model of transactional and transformational leadership behavior, with the intent to improve organizational performance. This model changed over time, since not all constructs were empirically distinguishable (e.g. Avolio, Bass, & Jung, 1999). Due to critical notes on Bass’ model, the model of Leithwood and colleagues (Leithwood, Aitken, & Jantzi, 2001; Leithwood & Jantzi, 2005; Leithwood & Riehl, 2005) is used as foundation of transformational leadership for this study (see table 1).

Table 1

Transformational leadership dimensions according to Leithwood and colleagues

Dimension	Description
Setting Directions	Building school vision, developing specific goals and priorities, and holding high performance expectations.
Developing People	Providing intellectual stimulation, offering individualized support, and modeling desirable professional practices and values
Redesigning the Organization	Developing a collaborative school culture, creating structures to foster participation in school decisions, and creating productive community relationships

Note. Based on Leithwood, K., & Jantzi, D. (2005). A review of transformational leadership research 1996–2005. *Leadership and Policy in Schools*, 4(3), p. 177–200.

This model is based on Bass' model, but a number of significant changes have been made. Firstly, the model of Leithwood and colleagues is developed with a focus on leadership within the school context. Secondly, their model stresses the importance of leaders influencing the organizational context, for which they developed the dimension redesigning the organization. This received limited attention in Bass' model (Leithwood & Jantzi, 1999). Redesigning the organization, entails developing a cohesive school culture with shared norms, values, beliefs, and collaboration in order to develop education, and in which participation in school decisions by everyone is promoted. The dimension developing people, signifies that the leader is actively involved with the teachers. Intellectual stimulation entails a school leader that stimulates, challenges, and encourages teachers to question already existing methods and ideas, and stimulates teachers to carry out their tasks more effectively. Individualized support indicates understanding the needs of each teacher and take into account their feelings, ideas, and opinions when making decisions. Lastly, their model highlights direction setting. As described earlier in this research, it is important for school development that leaders develop a shared vision with corresponding goals and try to inspire and motivate their staff to reach these organizational goals.

1.2.5.2 Effects of transformational leadership

As noted before a transformational leader strives, if necessary, to a change in others and the environment to reach school goals. To be able to call this change sustainable it should become a lasting change while striving for continuous improvement. Transformational leadership could have a positive effect on sustainability. Overall, research has showed that this form of leadership has a positive effect on the work environment, which can lead to changed teacher behavior, which in turn could lead to adjustments in benefit of the students and the school.

Effects on school conditions are studied by among others, Leithwood and Sun (2012) and Wang et al., (2011). Leithwood and Sun (2012) found medium to large effects of transformational leadership on the development of shared goals, an enhanced work environment, and on improved instruction. A moderate effect was reported by them on organizational culture and shared decision making. In the study of Wang et al., (2011), the strongest relationship found is between transformational leadership and higher team level performance.

Regarding effects on teachers' internal states and behaviors, the study of Leithwood and Sun (2012) found moderate to high effect on teachers' internal states, such as teacher commitment. They also report a moderate to high effect on influence on teachers' behavior, which they ascribe to the dimension developing people. Another finding is a moderate to high effect on relationship building, and the development of a shared vision, which they attribute to the dimension direction setting (Leithwood & Sun, 2012). Geijsel, Sleegers, and van den Berg (1999), whom conducted their research at Dutch primary and secondary schools, reported that transformational leadership has an indirect effect on teachers' changed practices. Enhanced employee attitude and motivation are a less often reported effect of transformational leadership (Judge & Piccolo, 2004).

Effects on student performance are reported less and are significantly smaller. Leithwood and Sun (2012) for instance, reported in their study a small, yet positive effect on student achievement in reading and mathematics. Most other studies report indirect effects of transformational leadership on student achievement. Leithwood and Jantzi (2005) for example, refer in their article to multiple studies that indicated significant indirect effects of transformational leadership behavior on student achievement and engagement in school. Their summary of the findings is as follows (p. 186):

- a consistent pattern of results suggesting that transformational leadership effects are augmented by prior student achievement, family educational culture, organizational culture, shared school goals, and coherent plans and policies.
- a consistent pattern of “no effect” for teachers' age, gender and years experience in school (3 of 4 studies).
- mixed or unknown results for all other moderators. “Mixed” describes the results for school size, clearly the most studied moderator (8) and the trend in these results is consistent with a considerable amount of other evidence (e.g., Howley, 2002), demonstrating a negative relationship between school size and student achievement.

To conclude, most prominent findings are the effects on school conditions and teachers' internal states and behavior, which have also been found conditional for long-term change in the sustainability literature.

1.2.6 Distributed leadership

1.2.6.1 Definition of distributed leadership

Despite the fact that a transformational leader is capable to develop people and probably has the capacities to get teachers behind an educational change, it is impossible for this person to carry out all organizational tasks. Fullan (2007) stresses for instance that principals feel an enormous work pressure and Spillane (2005) mentions that “principals, or any other leader for that matter, do not single-handedly lead the school to greatness” (p. 143). These views imply that leadership is not something that is to be done alone, but involves multiple persons. Stoll (2009), among others, argues to develop *leadership capacity*, which can be translated to a team that tries to improve the school together. Stoll (2009) also argues that sustainability of an improvement can be assured when leadership is distributed and is embedded in the school's culture.

As with transformational leadership, a clear definition of distributed leadership is still missing. To prevent any ambiguity, this research uses the following definition:

Distributed leadership is a form of leadership whereby leadership is stretched out over a number of persons in formal or informal roles, who through reciprocal actions and interactions with each other and the environment lead the school together, whereby collaboration is not an aggregation of the work of different persons, but a collective activity that is based on a shared vision and shared goals. (based on: Copland, 2003; Elmore, 2000; Gronn, 2002; Harris, 2005a; Spillane, 2005, 2006; Spillane, et al., 2001; Spillane, Halverson, & Diamond, 2004; Woods, et al., 2004).

A few comments are needed by this definition. Firstly, this definition implies that both persons with formal, and informal leadership roles are capable to carry out leadership tasks and are able to influence others. With distributed leadership the ones with expertise, whether in a designated role or not, become the persons that are in charge for a solution of a particular problem together (Copland, 2003; Elmore, 2000; Harris & DeFlaminis, 2016; Spillane et al., 2001; Woods et al., 2004).

Secondly, distributed leadership is not solely a shared leadership practice among persons. Spillane et al., (2001, 2004) and Spillane (2005, 2006), emphasize the interplay of several factors. Spillane (2005) argues the following “distributed leadership is a system of practice comprised of a collection of interacting components: leaders, followers, and situation. These interacting components must be understood together, because the system is more than the sum of the component parts or practices” (p. 150). This implies that leaders have an influence on followers, and vice versa. The same applies to the situation, which not only consists of the school's context, but also entails aspects such as routines and tools that are being used (Spillane, 2006; Spillane et al., 2004).

Thirdly, as Spillane (2005, 2006), Harris and Spillane (2008), and Harris and DeFlaminis (2016) claim, there is no blueprint for distributed leadership. Spillane (2006) states that distributed leadership provides a framework to understand leadership practice better, and that it “is not a recipe for effective leadership practice” (p. 126). Even though there is no blueprint, some authors suggest guidelines, patterns, or principles for distributed leadership (e.g. Gronn, 2002; Spillane, 2006). It is of importance to notice however, that distributed leadership should be developed within schools, and should be connected to the school's specific situation, routines, values, and norms.

Lastly, it is argued by some that with distributed leadership, staff turnover is less of a problem. The staff is assumed to have more knowledge regarding educational practices within the school, and to feel more responsible for school improvement. Through the distribution of knowledge and responsibility, schools are better protected against the possible loss of key staff members (e.g. Hargreaves & Fink, 2003). Although knowledge is better distributed with this type of leadership, schools should still prepare for possible leadership transitions (Copland, 2003; Hargreaves & Fink, 2003).

Distributed leadership can be developed when the school leader is capable to delegate some of his tasks to others (Copland, 2003; Fullan, 2007), but as Spillane (2006) and Spillane et al., (2004) mention, distributed leadership is not just the delegation and division of tasks. Leadership is stretched over multiple persons, which are interdependent of each other, whereby task execution is achieved by reciprocal interaction. The school leader does not have all knowledge, therefore some tasks will be appointed to others with more experience or knowledge in that area. These persons should in turn know

what is expected of them, should have a sense of responsibility, and they should have the feeling that they can make autonomous decisions (Schildkamp et al., 2014a). The school leader will in turn act more as a catalyst for change, protector of the shared vision, builder of leading capacity in others, and in general, as facilitator of the change (Copland, 2003).

1.2.6.2 Effects of distributed leadership

The empirical evidence of distributed leadership is still evolving at this moment. The literature, however, emphasized on its conceptual development, different forms of distributed leadership, and on description of distributed leadership practice within schools (e.g. Gronn, 2002; Harris, 2005a; Harris & Spillane, 2008). Therefore, the literature provides little empirical evidence about the (in-) direct effects of distributed leadership.

There is however evidence that suggests that distributed leadership is a potential positive contributor to organizational change (e.g. Gronn, 2002; Harris, Leithwood, Day, Sammons, & Hopkins, 2007; Spillane 2006). School improvement studies (e.g. Copland 2003; Spillane et al., 2001) underline the importance of teacher involvement in decision making, and argue that strong collegial relationships make a difference for school development. Involvement in decision making can in turn be indirectly connected to sustainability. As noted before, teacher engagement increases when they have the feeling that they are involved in the process, which is in turn significant for sustaining practices over time (Geijsel et al., 2009; King, 2016). Heck and Hallinger (2009) studied the effect of distributed leadership on student growth and found a small, yet significant indirect effect of distributed leadership on student growth in mathematics, whereby the growth was mediated by the school's academic capacity and social-curricular organization. Leithwood and Jantzi (2000) state in their study that they support "the distribution of a larger proportion of current leadership development resources to the development of teacher leadership" (p. 40). They do not claim that more leadership is better, and that everyone is capable to lead, they rather suggest that schools may benefit most "from the leadership of a small number of easily identified sources" (p. 40).

To conclude, there is some evidence about the effects of distributed leadership, however, the effects are rather small. This research contributes to the empirical findings of distributed leadership by investigating its link with sustainability.

1.3 Research question

This study aims to provide better insight in the relationship between leadership and the sustainability of data use in a Dutch primary school context. Based on the theoretical framework above, the following research question was developed:

Research question: What is the role of transformational and distributed leadership concerning the sustainability of data use within primary schools in the Netherlands that worked with the data use intervention?

2. Method

In this chapter the research design and used methods are addressed. Furthermore, the context with the selected respondents, the development of instrumentation, and the data gathering process and analyzation of the gathered data are described.

2.1 Context

Before addressing the respondents, some comments regarding the Dutch school-context should be made. The Dutch educational system has a high level of decentralization, no national curriculum, and thus a high level of autonomy for the development of education (OECD, 2012). Through this decentralized model, "there are wide variations between schools, which are free to distribute tasks and functions to several leaders" (Pont, Nusche, & Moorman, 2008, p. 76). This indicates that leadership structures can deviate from one another.

This study was conducted at protestant Christian school board X in the northern part of the Netherlands, which consists of 15 primary schools. Every school within school board X is led by the formal head of the school, the principal, and his management team. This team bases their task execution on the rules and guidelines that are developed by school board X. At most primary schools in the Netherlands, the school management team consists, next to the principal, of coordinators of different grades, and usually also of an *academic coach*. Coordinators are in charge of coordinating the day-to-day operations for different grades. To manage these day-to-day operations, primary schools in the Netherlands are divided in lower and upper grades: *onderbouw* (kindergarten), *middenbouw* (grade 1-3), and *bovenbouw* (grade 4-6), which all have a separate coordinator. The academic coach has as function to support teachers in the guidance of pupils with extra needs, is in charge of teacher professionalization, analyzes test (Cito) results, and develops interventions based on these results. The academic coach also develops and monitors, in consultation with the other management team members, the total care policy of the school. In this study, the whole management team was seen as the school leader, since they together facilitate education for all pupils (see figure 2). Therefore, when the term school leader is used, it includes all members of the management team.

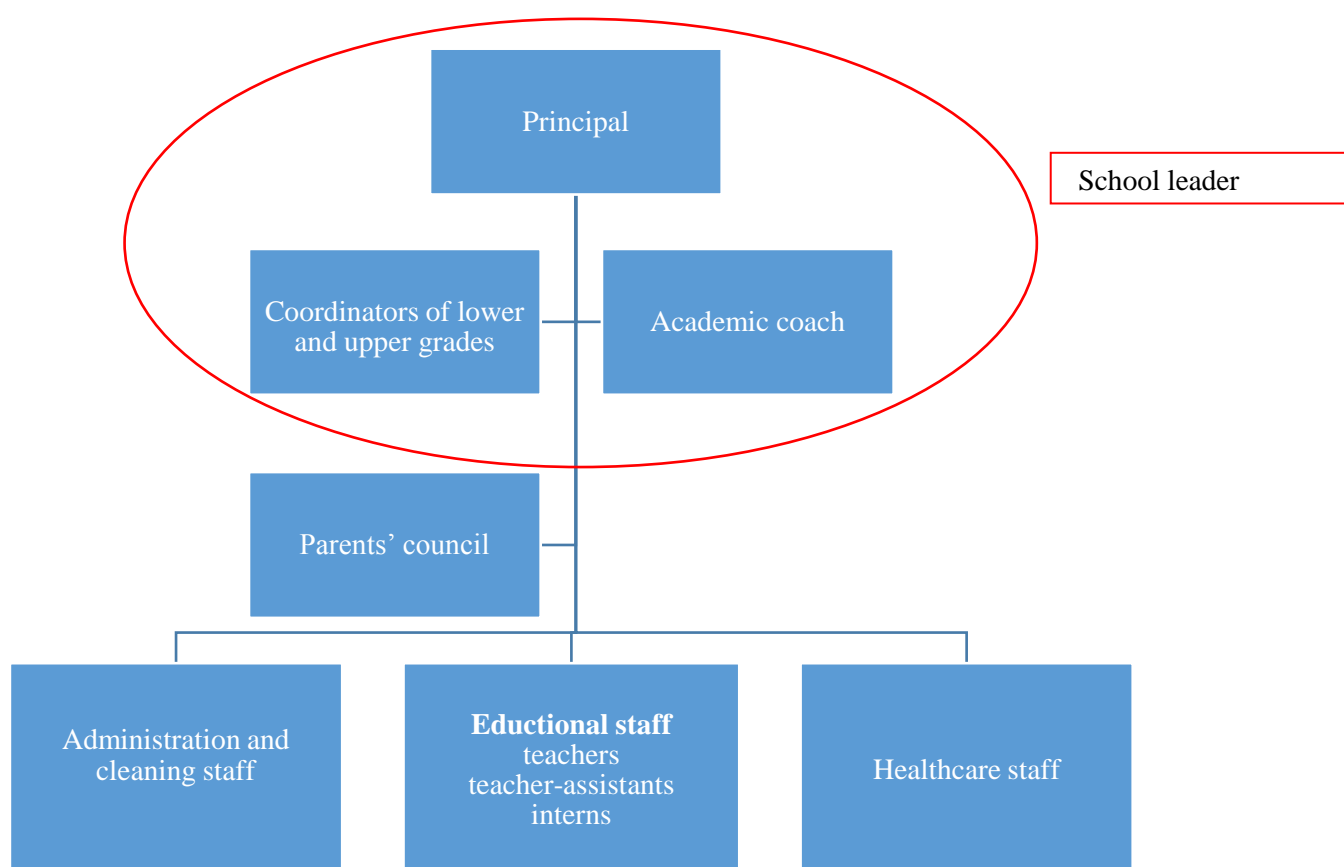


Figure 2. Overview of the school staff within a Dutch primary school

2.2 Respondents

Two schools of school board X participated in this research. School A has 251, and school B has 650 pupils, and both are under basic supervision of the school inspection (source: www.scholnopdekaart.nl). This means that the risk assessment by the Inspectorate of Education did not reveal any threats to educational quality and the Inspectorate has confidence in the quality of education provided by the schools (Inspectie van het Onderwijs, 2018).

These schools registered for the data use intervention for the reason of school development and improvement of education. To provide more insight in the relationship between leadership and the sustainability of data use within the schools, a total of seven interviews were conducted. Of school A, two teachers were interviewed. The school leaders of this school did not want to participate in this research, with as reason, a lack of time. Of school B, 4 teachers and a school leader participated. This

school leader was also a former member of a meta-data team consisting of school-board members. The choice to both interview teachers and school leaders was made, since they represent multiple organizational layers within the school, and may have complementing perspectives on leadership practices and its effect on sustainability.

Table 2
Respondents' attributes

Grade assignment	Kindergarten	Onderbouw	1
	1st grade	Middenbouw	1
	2nd grade	Middenbouw	1
	3rd grade	Middenbouw	0
	4th grade	Bovenbouw	0
	5th grade	Bovenbouw	1
	Grade 4/5	Bovenbouw	1
	6th grade	Bovenbouw	1
	Other	-	1
Years of experience ¹	0-10		2
	11-20		2
	21-30		1
	31-40		2
Age ²	20-30		0
	30-40		2
	40-50		3
	50-60		2
Role	Location leader		1
	Teacher		6

Note. N = 7. ¹ M = 19.5. ² M = 44.

2.3 Design and procedure

This study is an example of a qualitative research method, labeled as multiple case study (Gravetter & Forzano, 2009). This design was chosen, because multiple case studies enabled the researcher to gather detailed information of single individuals. While this type of research consumes a considerable amount of time, it often yields reliable in-depth information (Gravetter & Forzano, 2009).

The research was conducted in week 23 until week 26 of the schoolyear 2017/2018. Semi-structured interviews were held, since opposed to a structured interview, semi-structured interviews leave room for interviewees to express their own opinion, which can lead to more detailed information (Baarda et al., 2015). Another strong point of semi-structured interviews is the room for follow-up questions (Gravetter & Forzano, 2009).

Additional to the interviews, a document study was conducted. The school's school guide and multiple year policy plan, and the school board's strategic policy plan were analyzed. These findings were triangulated with the results of the interviews. Triangulation is a way of assuring the validity of a research, since multiple methods are used to collect data on the same topic (Cohen, Manion, & Morrison, 2007). By using multiple methods, different dimensions or perspectives of the same topic can be investigated, which will increase the researcher's knowledge.

Prior to the data gathering process, the Ethic Commission of the University of Twente was asked for approval of this study (see appendix A). After approval, members of three different data teams of two different schools were invited by email to participate in this study. In the invitation all participants were informed of the purpose and design of the study. Every interview had the average length of 45 minutes, and was conducted one-on-one. In the introduction part of the interview, the researcher introduced herself and informed all participants of the purpose and design of the study. Furthermore, the participants received information about what to expect during the interview, the duration of the interview, the amount of questions, the possibility to ask questions during the interview, the possibility to withdraw from the study, and the guarantee of the anonymity of their answers. All participants were also asked if they agreed with the fact that the interviews were voice

recorded, and were asked to sign an informed consent form (see appendix B). The participants were thanked after being interviewed, and provided with the researcher's contact information.

2.4 Instruments

In this research, data were collected by deploying semi-structured interviews (see appendix C) and an additional document study. The aim of the interviews was to gather information about the role of the school leader in relation to the sustainability of data use. The questions were based on already existing items of the studies of Ho, Chen, and Ng (2016), Hubers (2016), Leithwood and Jantzi (1999), Leithwood, Aitken, and Jantzi (2001), Geijsel et al., (2001, 2009), and on newly formulated items based on the constructs derived from the theoretical framework: sustainability, transformational leadership, and distributed leadership. All items were translated to Dutch and adjusted to the context. To verify the validity and to detect possible flaws, two researchers of the University of Twente reviewed the items, and a pilot interview with one teacher of one of the data teams was being held. After examination, it appeared that the order of the questions had to be changed and that the wording of 2 questions had to be adjusted before the actual interviews could be conducted. The final interview consisted of 31 questions, whereby 16 questions on the scale transformational leadership, 8 questions about distributed leadership, and 7 questions concerning the sustainability of data use (see appendix C and D). An example of a question on the scale transformational leadership is: "Who within your school is responsible for developing school goals and the school's vision?" An example for distributed leadership is: "Do you have additional tasks next to teaching? If so, what additional tasks do you have?" And an example for sustainability is: "Are you still working with the data use intervention? If so, in what manner?"

In addition to the interviews, a document study has been carried out. The school leaders were asked to provide existing school documents, such as policy documents and progress reports concerning data use. In the end, only school policy documents were provided, namely the school guide, the school's multiple year policy plan, and the school board's strategic policy plan. The school guide contains information about the way of working within the school, and the vision, rules, goals, and regulations of the school. This guide is distributed to the parents and pupils at the beginning of the school year. The school's multiple year policy plan contains the school's vision and describes the improvement plans that the school wants to carry out over a certain period of time. The school board's strategic policy plan describes the future goals for educational improvement of the school board that both schools are a part of. These documents gave further detailed information about how responsibilities are distributed across staff members, and how sustainability of data use is embedded within the schools.

2.5 Data analysis

The audio recordings of the interviews were transcribed verbatim, whereby names of participants were changed into fictitious names, through which none of the answers could lead to recognition of one specific teacher or school leader. All transcripts then were coded, based on the developed coding scheme (see appendix D) using the program Atlas.ti (Cleverbridge, 2018).

The coding scheme was based on the constructs, derived from the theoretical framework, namely: sustainability, transformational leadership, and distributed leadership. Examples of codes are: transformational leadership: developing people: individualized consideration, distributed leadership: collaboration, and sustainability: organizational routines, ostensive aspect.

In order to establish the reliability, a second researcher analyzed 10% of the gathered data. She was therefore first instructed how to use the coding scheme. The results of both coders were then compared. The interrater reliability was substantial (Cohen's Kappa 0.66) (van de Sande, 2001). The difference between coders was mainly due to the fact that the first coder had encoded more quotes for the code sustainability and for the code productive community relationships than the second coder. These quotes were discussed, after which a consensus was reached. The interrater reliability was then recalculated, resulting in a Cohen's kappa score of 0.79, which can be considered as substantial (van de Sande, 2001). The first coder then coded the remaining interviews, after which all coded quotes were listed and compared in order to reveal similarities and differences between respondents and between schools. These similarities and differences were then described in the results section, after which the results were interpreted to answer the research question.

The collected documents were read thoroughly, and coded based on the coding scheme. Information concerning norms, guidelines, policy, and vision were categorized as the ostensive part of the routine, and reflections on how data was being used, were categorized as the performative aspect of the routine (see appendix D).

3. Results

This chapter describes the results of the interviews and document study. First, the selected respondents and the problem that they have investigated using the data use intervention are defined, after which the results, structured by school and per construct, are described.

3.1 Case description School A

School A is a protestant Christian school with 251 pupils. Two teachers were interviewed, namely Emily of grade 2, and Harry of grade 5.

The data team of school A focused on interactive teaching methods, to actively involve pupils with the lessons. After investigation of data within the school, they concluded that few teachers used these methods, since they find it difficult or lack sufficient knowledge to correctly apply these methods (Gelderblom, 2018). Thus, the data team decided to provide the teachers with new cooperative teaching methods and ways to incorporate these in their classes. This information would be given once per month, during a teacher meeting (for a more complete overview, see Gelderblom, 2018).

3.2 Sustainability School A

3.2.1 Ostensive aspect

Emily and Harry were not able to define a vision for data use, and stated that a formal document regarding this vision was missing. In the school's policy documents, data use, and goals related to data use were described, however, rules and guidelines for data use were missing. The documents described that the school strives for continuous school development and for an increase in student achievement scores, and the data use intervention was reported as one of the means to reach these goals. The school's multiple year policy plan reported that all personnel should be trained for data use by the end of 2016 – 2017. The school leader was mentioned as an enabling factor for data use. The school leader should:

- a) Organize, and invest in working with data teams (2015 – 2019)
- b) Make sure that all personnel is specialized in analyzing test-results, and able to convert this data into the right student guidance (2015 – 2019)
- c) Organize, and invest in training regarding personnel's analyzing skills (2015 – 2019)

Furthermore, two goals related to the data use intervention were described: *“All teachers should be trained in cooperative learning strategies, and should apply a minimum of two cooperative learning strategies per day.”*, and *“Teachers give each other feedback during organized meetings.”* According to both teachers, organized meetings for teacher feedback still take place, whereas training on cooperative work forms does not. Another goal related to data use for 2015 – 2019, mentioned in both the school board's strategic policy plan and the school's multiple year policy plan, was to establish different work groups. These groups should, with the help of data, focus on further development of specific parts of the student curriculum, such as reading skills.

3.2.2 Performative aspect

The gathered policy documents stated that pupil progress is monitored, using different data sources. These data consist of Cito-, and curriculum-embedded tests scores, notes of parent-teacher conferences, and teacher notes regarding, for instance, pupil behavior. These data are collected in the pupil monitoring system, and analyzed at least two times a year by the teachers in collaboration with an academic coach. The academic coach is furthermore responsible for whole school comparisons, and these results and possible interventions are discussed during study days.

When asked which data were being gathered and for what goal data was being used within the school, the teachers almost exactly described the process as stated in the policy documents. In addition they mentioned that Cito-scores, and student achievement scores of curriculum-embedded tests were the most gathered data within the school and used to evaluate student achievement and for improvement of classroom instruction. Emily also explained that the data use intervention did not alter their way of

working in this area. Evaluation of student achievement and alteration of classroom instruction using Cito-scores and scores on curriculum-embedded tests was an already existent process.

Although Harry and Emily claimed that data is gathered for the sake of evaluation of student achievement and for improvement of classroom instruction, both teachers stated that next to this, data use is not yet embedded in daily practice. Both teachers also mentioned that there is a difference in teachers' skills and knowledge for data use, also among teachers that took part in the data use intervention. Emily stated that some colleagues find it difficult to use data, and would rather go for a quick fix, instead of going into depth and analyzing the exact cause of an existing problem. Both Emily and Harry, however, mentioned that in general the attitude of those that were part of the data team changed. These teachers are more aware of the fact that they should look further than a quick-fix and are more aware of the benefits of data use, and therefore try to make decisions based on data instead of on intuition.

3.2.3 Continuous improvement

The data team that focused on activating teaching methods is not active anymore, and no other data teams were founded. Instead, work groups were founded, which focused on alteration or development of different courses. According to both teachers, these work groups base their actions on data. Established goals are evaluated, and if needed, actions are adjusted to achieve these goals. Before implementation of the data use intervention, this way of working was less frequent. Both Harry and Emily furthermore explained that data use has been adjusted to the school's context, because, among other things, sufficient time was lacking to follow all the steps of the data use intervention and the school suffered from high staff turnover. Furthermore, both explained that the school focuses on too many topics for improvement at the same time, through which it is impossible to do everything as intended.

The intervention, as developed by the data team, focused on pupil involvement in the lessons, using interactive teaching methods. Steps towards this goal are being made. Emily referred to the tangible proof, the developed cards for cooperative learning within the classroom. She explained that by introducing these cards, the concept is more widespread among teachers, but that for some teachers it remains difficult to use these cooperative teaching methods. Both Emily and Harry explained that it is teacher dependent whether or not interactive teaching methods are implied within the lessons. Nevertheless, both teachers stated that cooperative teaching methods are more present than before.

3.3 Transformational leadership School A

3.3.1 Redesigning the organization

Participation in decision making

Harry and Emily explained that teachers are involved in decision making processes, including innovations and implementation thereof. Teachers were, however, not involved with the implementation of the data use intervention. This intervention was introduced by the school board, after which the school leader decided it would benefit the educational quality, and decided to implement it.

Creating productive community relationships.

Harry and Emily mentioned that open communication is key for a good relationship between the school leader and the teachers, and for teacher collaboration as well. They stated that both teachers and the school leader work towards open communication with short communication lines. In case of a problem, question, or concern, the school leader can be easily approached. The reciprocal contact between teachers is mostly in between work and therefore not structural. In the interest of maintaining a continuous quality of education, Emily would like to see more structural collaboration with teachers other than her duo partner or teachers of her own grade.

3.3.2 Setting directions

Developing and sharing vision and goals

The school's multiple year policy plan described that by the end of 2017 "*A recognizable contemporary vision on education, aimed at developing the talents of children and personnel*" should be developed. According to Emily, the school's vision and corresponding goals were developed by the management, and teachers were only consulted and updated on study days. Harry, however, stated that the school's vision and goals were developed at study days in collaboration. When it comes to actually sharing the

same vision, Harry stated that after establishment of a school's vision, there are always slight differences in opinion, but that teachers who do not agree on several points would be better off by working at a different school.

Motivation for data use

Harry claimed that teachers are not motivated for data use by the school leader. He stated: *"It is more or less communicated by the school board, this is the way we are going to do it, and that's it."* Emily expressed the opposite and stated that teachers are being motivated by the school leader to analyze student growth by analyzing curriculum-embedded test scores, and Cito-scores.

High expectations

In the school board's strategic policy plan, high teacher expectations are explicitly described: *"We expect from a good teacher that he/she can both positively deal with and show strong mental fortitude when handling problems and burdens that the field entails in order to improve educational quality."* However, according to Emily, in practice, high expectations are mainly expressed implicitly. For example, on study days the student achievement scores are being compared with the national Cito-standard, and high expectations regarding deviations of this standard are being expressed. Harry stated that he does not think that the school leader holds high expectations, yet stated that it is appreciated when teachers have a certain vision and do not succumb easily to outside influences. Neither mentioned the expression of high expectations on individual level, or regarding data use.

3.3.3 Developing people

Role model

In the school's multiple year policy plan, the school leader is described as a role model for, among other things, school development and data use. The goals connected to this are:

- a) Being a role model, by showing a professional attitude through: being able to reflect, to be open to learning, being able to give and receive feedback
- b) Analyze data and develop interventions based on these data.

According to Harry and Emily, the first goal is partly met, whereas the second goal is not. They explained that the school leader would alter her way of working when a work group would bring something to light, provided that it is substantiated with well-founded arguments. Data use by the school leader in daily practice is, however, not noticeable.

Intellectual stimulation – professionalization

Both Harry and Emily stated that there is room for professionalization, and teachers can make their own choices therein. Emily added that professionalization in addition to teaching is difficult. She elaborated that professionalization on a small scale is possible, such as following a one day course. Still, to be able to really professionalize you need a lot of energy and time, which, according to Emily, a lot of teachers do not have due to the current workload.

Intellectual stimulation – evaluating your own work

Both teachers described that evaluation of work is always expected and prevalent in their job. They evaluate their instruction by asking the pupils if everything was clear, and they evaluate their success by student achievement scores.

Individualized consideration – work- and personal problems

Both Emily and Harry affirmed that the school leader is available in case of personal or work-related problems. Emily indicated that she herself keeps her work and private life strictly separate and only discusses her private problems if they obstruct her work. Harry mentioned that this differs between teachers, but stated that in order to function properly, problems should be discussed.

Individualized consideration – appreciation

Harry mentioned that it is appreciated by the school leader when teachers reflect on the diverse processes that are going on within the school, but that appreciation is not expressed explicitly, and also not on

individual level. Emily stated the opposite and gave an example in which the school leader showed one-on-one appreciation. Appreciation regarding data use was not mentioned by either of them.

Individualized consideration – input and ideas

Teachers' personal ideas or input are taken seriously by the school leader. Emily stated: "*They (the management team) are listening to you and you get the opportunity to work something out.*" She gave an example of burning a candle during bible-reading. She came up with the initiative, discussed it with the school leader who was positive about it, and gave her the freedom to arrange it. Harry explained that sometimes there is room for personal ideas and input, and "*sometimes the school as an organization has to make a different choice, which is understandable.*"

3.4 Distributed leadership School A

3.4.1 Task division

All teachers of school A have additional tasks, which are divided by the school leader on basis of fulltime-equivalent. Teachers may indicate their preference, which is taken in consideration in the division of tasks. The school board's strategic policy plan described that the school board would like to see that the school works towards more shared responsibility, with as goal more flexibility among personnel and an increase of employability. Both Harry and Emily stated that they have additional tasks, they both are, for example, appointed as coaches for teacher feedback. In this role, they have slightly more power and responsibility than other teachers, but Emily stated that she does not feel it that way. Other additional tasks are executed within the work groups, thus in collaboration with other teachers. Furthermore, a flat hierarchy exists within this work groups, no one bears more power or responsibility than another.

Both teachers stated that they feel quite autonomous in their task execution. Harry however mentioned that he sometimes feels somewhat restricted by the school board or the school leader. He stated that although you have the freedom of choice, it is limited considering the fact that you have to work within the boundaries of certain frameworks.

3.4.2 Collaboration

In the school board's strategic policy plan it is described that in order to provide good education for every pupil, teamwork is necessary. Emily, however, mentioned that collaboration with other teachers, aside from the work groups and the duo partner, is mostly unstructured, incidental, and takes place in between things or after school time. She would like to see more structural collaboration with teachers other than her duo partner or teachers of her own grade. She stated: "*I think it will benefit the quality (of education) if you regularly have a feedback moment.*" Harry agreed that collaboration mostly takes place in their spare time and in between jobs. On a more positive note, Harry stated that there is a lot of collaboration between grades, pointing out thematic education and adapted student curricula (leerlijnen in Dutch).

Next to informal collaboration, study days, cluster-, and team meetings are planned throughout the year by the school leader. In these meetings, processes of the school are discussed, such as the school's progress, student achievement, teacher behavior, and thematic education.

3.5 Case description School B

School B is a protestant Christian school with 650 pupils, divided over two locations. At the first location, two teachers were interviewed, namely Oliver of combination grade 4/5, and Sophie – a grade 6 teacher. At the second location, another two teachers were interviewed, namely Chloe, a kindergarten teacher, and grade 1 teacher Jessica. The location leader of the second school location, James, was also interviewed. Before, James shared his leadership with two others, but recently changes took place within the management team. The management team now consists of two school leaders, instead of three. James is still location leader, but shares his leadership since May with a new school leader. Furthermore, the management team cut back on academic coaches. This means that there is almost a whole new management team since May 2018.

The data team at school B studied the third grade's disappointing math performances. After investigation of gathered data within the school, and a literature study, they concluded that classroom

instruction should be altered. Different components of classroom instruction were mentioned, of which “equipping teachers with the skills necessary for activating pupils’ prior knowledge” (Gelderblom, 2018, p. 132) was chosen as a starting point.

3.6 Sustainability School B

3.6.1 Ostensive aspect

None of the teachers were able to point out a vision on data use, and stated that a formal document regarding this vision is missing. Sophie and Jessica stated that the vision for data use is in development, and therefore not yet described in any school policy documents. James was able to formulate a vision on data use, but that vision was mainly focused on the benefits of data use in general, instead of what the school wants to achieve with data use, and how data should be handled. He stated the following: *“The vision is that it (data use) brings more depth into education and that it also ensures that the number of assumptions that normally quickly emerge to the surface, disappear.”*

In the gathered policy documents data use, and corresponding goals were described, however, rules and guidelines for data use were missing. Two goals related to the developed intervention were mentioned in the school’s multiple year policy plan: a) increasing student involvement in the lessons, and b) implementing activating teaching methods. Furthermore, the policy documents described that the school focuses on the delivery of good educational results. The school therefore aims to use data, gathered by using the following tools:

- a) Measurements of teacher skills, using a standardized instrument
- b) Biannual school satisfaction surveys that are conducted among parents, teachers, and pupils
- c) Data from the pupil monitoring system
- d) By working according to the data use intervention

Another goal for 2015–2019 was described, namely improvement of analytical skills of the whole school team. Furthermore, improvement of teacher collaboration, and development of teacher professionalization to improve the quality of educational interventions, such as developed by the data use intervention, were mentioned. Next to implementation of the data use intervention, formation of work groups were described. These work groups are responsible for further development or alteration of certain aspects of the current student curriculum.

3.6.2 Performative aspect

The gathered policy documents stated that pupil progress is monitored, using different data sources. These data consist of Cito-, and curriculum-embedded tests scores, notes of parent-teacher conferences, and teacher notes regarding, for instance, pupil behavior. These data are collected in the pupil monitoring system, and analyzed at least two times a year by the teachers in collaboration with the academic coach. The academic coach is furthermore responsible for whole school comparisons, and these results and possible interventions are discussed during study days.

When asked which data were being gathered and for what goal data was being used within the school, the teachers almost exactly described the process as stated in the policy documents. In addition they mentioned that the main goal of data collection is to increase student achievement, and that Cito-scores are therefore the most gathered and most used data within the school.

Although all teachers stated that data is gathered for the sake of an increase in student achievement, all teachers and James stated that next to gathering and analyzing Cito-scores, data use is not yet embedded in daily practice. Not every teacher gathers and analyzes data for alteration of classroom instruction or for solving a particular problem they encounter, and between those who do, the quality differs.

In the end, all teachers and James, claimed that the biggest gain of having worked with the data use intervention is that in case of a problem, loose assumptions and decisions based on intuition are less frequent than before.

3.6.3 Continuous improvement

According all teachers and James, the data team that focused on activating the pupil’s prior knowledge no longer exists. Instead, different work groups are formed that, with the help of data, focus on further development or alteration of certain aspects of the current student curriculum. However, the

teachers and James differed in opinion regarding following the actual steps of the data use intervention within these work groups. The teachers stated that the work group mathematics tries to include all steps of the data use intervention, but is not always successful, because, among other things, sufficient time is lacking for proper analysis. Moreover, the school also suffered from staff turnover, people with know-how transferred to other schools. Additionally, the teachers explained that the data use intervention is not yet implemented in other work groups, but that it is on the school's agenda. James contradicted their statements, and claimed that the steps of the data use intervention are not followed anymore within the school. *"It could be that teachers who were part of the data team try to use it in their own work. At least, I hope so, since that was the general idea. But for the rest, no, the data use intervention is not used anymore."*

The intervention, as developed by the data team, focused on activating pupil's prior knowledge. The teachers differ in opinion whether the goal *"all teachers activate the pupil's prior knowledge in their lessons"* is reached. Chloe claimed that in kindergarten activating prior knowledge is a core element in all lessons, and the goal therefore has been reached for her grade. According to the other teachers, the school is still working on it. Jessica, for example, stated that on the latest measurements of teacher behavior, too few results came in. Therefore, it could not be concluded if teacher behavior regarding activating pupils' prior knowledge, has improved. Sophie explained that activating pupils' prior knowledge still has to become an automatism and that it is impossible to expect results after a single year. Additionally, the teachers also indicated that next to activating pupil's prior knowledge, they are currently making plans for the implementation of multiple cooperative teaching methods. Their next goal is to embed these teaching methods in all their lessons.

3.7 Transformational leadership School B

3.7.1 Redesigning the organization

Participation in decision making

All teachers agreed that they have a say in case of an innovation. Their opinion is being asked, and discussions with the entire team takes place. Before anything can be realized, 80% of teachers must agree with a proposal. James stated that previously, teachers were less included in decision-making processes, and mentioned as example the implementation of the data use intervention. The implementation of this intervention was then decided by the management team, yet teachers had input about participation and execution. The new management team tries to include teachers more often, as this is also a goal described in the school's multiple year policy plan.

Creating productive community relationships

The teachers and James stated that there is a good mutual relationship between the school leader and the teachers. If something needs to be decided or someone has a question, all parties are approachable and decisions are made in consultation. Individual communication between teachers and the school leader happens, according to James, mainly in the reflective conversation cycle. This is an individual conversation in which the teacher's functioning is discussed, after which points of development are established. James stated that these conversations have unfortunately moved to the background, and should become again a regularity.

Mutual communication between teachers is of informal nature and mainly takes place in between their job or after school time. Grade 6 even created a WhatsApp group for easy communication between teachers of the two school locations.

3.7.2 Setting directions

Developing and sharing vision and goals

The school's multiple year policy plan described that in the former development period (2011 – 2015) the school developed a shared school vision in collaboration with all school staff. According to all teachers and James, the school's vision is indeed developed in collaboration. For this development, multiple study days were organized in cooperation with an external educational bureau. During these study days some basic starting points were developed. These were combined with the vision of the school board, after which a final school vision was established. The only teacher who has the feeling that most of these decisions were made by the school leader, is Chloe.

Within the process of developing a vision, differences in opinion do exist. Oliver explained that sometimes you have to compromise, and that a minority of the teachers feel like that they are being pushed in a certain direction. Both Jessica and Oliver clarified that it is impossible for everyone to agree on all points, mainly because a lot of people are involved.

Motivation for data use

The answers regarding being motivated for data use differed. Jessica stated that she does not feel that the school leader motivates the teachers considerably for data use. Chloe stated that she feels stimulated for data use. According to Oliver and Sophie, motivation for data use is mainly focused on Cito-scores. James confirmed this, he stated: *“Yes they are certainly encouraged (for data use), both by me, but in this case most often by the academic coaches. With group analyses and student analyses and the like.”*

High expectations

In the school board’s strategic policy plan, high teacher expectations are explicitly described: *“We expect from a good teacher that he/she can both positively deal with and show strong mental fortitude when handling problems and burdens that the field entails in order to improve educational quality.”* This expectation was not explicitly mentioned by the teachers, but they described some aspects of this expectation, whereas James did not. All teachers stated that the school leader expresses expectations concerning teachers’ functioning. Sophie claimed that they are expressed on individual level, whereas Oliver mentioned that most expectations are expressed to the team as a whole, and mainly concern whole school functioning or student achievement scores. Chloe stated that the school leader expects that you are involved and serious about your job. Jessica stated that she does not notice anything concerning high expectations, she explained: *“they (the management) are happy as long as everything in your grade goes well.”* James claimed that he does not necessarily express high expectations to teachers as individuals. He explained that it is obvious from his way of acting, talking, and especially from his way of asking questions, that he has high expectations.

3.7.3 Developing people

Role model

All teachers stated that the current school leaders would change their actions, assuming that they are provided with valid arguments. Only Jessica stated that she cannot predict the school leaders’ response. She stated: *“I find it hard to predict. Of course, you hope that they will go along. That they do not think higher of themselves, like: we are the management, we are decisive.”* James stated that he would change his way of working when it benefits the school, and all arguments are based on proper research.

According to the teachers, mainly academic coaches use data. They see proof thereof at meetings and study days. On these study days teachers are provided with diagrams and diagnoses of school development and student achievement. The teachers stated that they do not exactly know if the new school leader uses data. They stated that he must do so in favor of school development, yet details are unknown. Sophie, referring to James, stated that he uses data in his daily actions: *“It can be seen in his everyday actions. Decisions are never made without proof.”* Additionally, Jessica suggested that James could teach the new school leader about data use. James himself described that the data use intervention increases your analytical skills, and ensures that you deal with data more consciously. He explained that he uses these skills, but does not follow the steps of the data use intervention per se in his daily actions.

Intellectual stimulation – professionalization

All teachers stated that at this moment, there is room for professionalization, for which the teachers have to take the initiative. If they are interested in something, they should discuss it with the school leader. They added that the school leader sometimes takes the initiative and comes up with an idea for professionalization that is in line with the teachers’ learning goals and/or interests. Jessica elaborated that although you have the opportunity for professionalization, it is quite hard to do so. Besides the financial issue of following, for example, a masters, she mentioned the aspect of free time. James confirmed that it is sometimes difficult to schedule professionalization activities next to teaching, also considering teachers’ personal situations. He gave having young kids or other family circumstances as an example. He also mentioned that most teachers like to choose practical, instead of more in-depth courses. In-depth courses are less favored by the teachers since they take more time, and do not deliver

immediate, tangible results. According to James, teachers should be encouraged by him and other management team members to choose more in-depth courses, since both the teachers themselves and the school will gain more of it.

Intellectual stimulation – evaluating your own work

The teachers stated that it is their job to constantly evaluate their work, and that they do not receive external motivation to do so. They evaluate their instruction by asking their pupils if everything was clear, and they evaluate their success by the hand of student achievement scores.

Individual consideration – work and personal problems

According to all teachers, the school leader can be easily approached in case of work or personal problems. Jessica however added that she received signals of other teachers who feel they are not being heard. She herself however does not have that problem. Oliver also stated the opposite, he stated that the current school leaders are involved with the teachers and he has the feeling that he is being seen. He therefore gave multiple examples, such as substitute arrangement in case of sickness, classroom visits, and lastly he mentioned his task-hours. Last year, he had a lot of extra tasks and thereby difficulties in his class, through which it became hard to manage everything. This year, he has combination grade 4/5, and a lot of pupils with behavioral problems. To be able to completely focus on teaching, the school leaders provided him with less task-hours. Chloe stated that she still has to experience this aspect with the new school leader, and therefore cannot conclude anything yet. James explained that teachers are free to choose to whom they turn to in case of a problem. He elaborated: “(...) *In the end it's about having the idea that you can safely report it (a problem) somewhere and if that is not with me, while stated officially that you should, then just choose another person.*” He added that some teachers experience a barrier to report a problem. Regardless of the way problems are solved – as long as they are solved – James is okay with it, although he hopes that teachers will motivate each other to discuss it with the management.

Individual consideration – appreciation

All teachers varied in their answer, yet agreed on the fact that appreciation is seldom aimed at individual level. The only teacher who mentioned individual appreciation is Sophie. James stated that appreciation towards teachers should be expressed more often. He explained that appreciation was mainly expressed in the reflective conversation cycles, which have decreased over the last 1, 5 years, among other things due to multiple changes in the management team. James also stated that teachers find it hard to receive appreciation. He explained that positive feedback is often dismissed as “*that is just our job*” whereas positive critical feedback is quickly interpreted as a personal attack. He elaborated that some teachers get uneasy, or start doubting themselves when he asks critical questions, or provides them with feedback. He stated that teachers need to grow in this aspect, since it is his intention to only inform teachers about their actions, in order to learn from it.

Individual consideration – input and ideas

Oliver and Sophie explained that in comparison with the former management, the current management team works according a more bottom-up structure. They consult and collaborate with teachers. All teachers agreed that they have input, and their ideas are taken seriously when provided with strong arguments and when in line with the school goals. Sophie and James added that 80% of the teachers should agree with a proposal before it can be implemented. Jessica expressed that in general, teacher's opinions are handled with care, however, she also expressed that some teachers have the idea that they are not being heard. Chloe explained that small, short-term ideas can be realized most of the time. She stated that long-term ideas take longer to realize, and also, not all ideas can be executed, which she finds understandable.

3.8 Distributed leadership School B

3.8.1 Task division

All teachers within school B have additional tasks that are divided by the school leader on basis of full-time equivalent. Teachers' preferences, dislikes, strong, and weak points are taken into account in the division. After a first division, teachers get the opportunity to react, after which a final version is formed.

In the school board's strategic policy plan it is described that the school board would like to see that the school works towards more shared responsibility, with as goal more flexibility among personnel and an increase of employability. The teachers stated that additional tasks are mainly appointed to work groups, in which teachers collaborate. Furthermore, a flat hierarchy exists within this work groups, no one bears more power or responsibility than another.

On the one hand, all interviewed teachers expressed that they feel autonomous in the execution of their additional tasks. On the other hand, they also mentioned that before execution, final proposals must first be approved by the school leader. A work group's chairman is therefore in constant contact with the school leader. James confirmed this way of working, but stated that he thinks that the teachers have quite a lot of autonomy in the execution of their additional tasks.

3.8.2 Collaboration

In the school board's strategic policy plan it is described that in order to provide good education for every pupil, teamwork is necessary. In addition, the school's multiple year policy plan described that further improvement of collaboration on team level should take place, with as goal to increase the school's learning capacity. The teachers claimed, however, that collaboration mainly takes place in between teaching or after school time. On a more positive note, all teachers were very positive regarding collaboration within the work groups, since teachers of all grades then actively work together. James stated that, next to the planned study days, team-, and cluster meetings that are planned after school time, he does not structure any collaboration. He explained that it is impossible to imply rules for collaboration, since every teacher has different preferences for ways of collaboration.

4. Conclusion / Discussion

The goal of this study was to examine the relationship between leadership and sustainability for data use. The research question was "What is the role of transformational and distributed leadership concerning the sustainability of data use within primary schools in the Netherlands that worked with the data use intervention?" In this chapter the answer to this question is formulated by discussing and interpreting the findings and their relation to the literature. This chapter is concluded with limitations of this study, recommendations for future research, and recommendations for practice.

4.1 Overall conclusion

The results of this study showed that sustainability for the data use intervention was partly achieved at both schools, which seems to be related to leadership behavior. The degree of sustainability at both schools is comparable, since both school leaders showed good transformational and distributed leadership in some areas, positively influencing sustainability, but fell short in other areas. Therefore, for both school leaders it can be concluded that further development of leadership is likely to lead to a higher degree of sustainability for data use within their school.

Transformational leadership could contribute to the sustainability of data use by motivating and stimulating teachers for data use, through teacher support, and by giving a good example. The studies of Ebbeler (2016) and Schildkamp and Kuiper (2010) showed that schools with supportive school leaders did better at maintaining the data use intervention than schools without such leaders. However, both school leaders fell short in some of these areas. Teachers did not have sufficient time to analyze data, not all teachers received enough training for data use, and role model behavior remains a point of improvement for both school leaders. Data use in daily practice was, for example, not noticeable for the school leader of school A, and it was suggested that James of school B uses data in daily practice, but the teachers reported that mainly the academic coaches were involved with data use. Nothing can be concluded yet about the role model behavior of the other school leader of school B, given that he has just been appointed. Motivation for data use is also an important factor for sustainability, since it, among other things, could increase teacher involvement with data use (King, 2016). However, there was no agreement between the teachers of both school A and school B concerning active motivation for data use. Some teachers stated that active motivation for data use was missing, whereas others claimed that active motivation for data use was present. A transformational school leader should also encourage teachers to question already existing methods and ideas (e.g. Leithwood & Jantzi, 1999), which implies that they challenge teachers to look critically at their own work and their own teacher behavior. Yet, at school B external motivation for evaluation of teacher's own work and teacher behavior was lacking,

and details for school A were missing, so that no conclusion could be drawn for school A. Expression of appreciation towards teachers could increase motivation for, and commitment to, achieving organizational goals related to data use (e.g. Leithwood & Sun, 2012; Wang et al., 2011). For school A there was no consensus concerning the school leader's expression of appreciation towards teachers, and for school B it can be concluded that appreciation is seldom aimed at the individual, and according to the school leader, appreciation towards teachers should be expressed more often.

There were also areas where the school leaders did show good transformational leadership, positively influencing sustainability. They, for example, tried to include teachers in decision-making processes, and in case of school B, the school leader involved the teachers by the development of the school's vision. At school A, there was no consensus about teacher involvement concerning the development of the school's vision. However, it is important that teachers are involved in these types of processes, because it will increase their awareness of the content and importance of the decision (Hargreaves, 2004; Stokking, 2002). Furthermore, it can be concluded that both school leaders have a good relationship with the teachers, and they both stimulated teacher professionalization and offered individualized support, which entails understanding the needs of each teacher and taking into account their feelings, ideas, and opinions (e.g. Leithwood & Jantzi, 1999, 2005).

Distributed leadership could contribute to the sustainability of data use by the distribution of knowledge, delegation of leadership tasks, and by fostering collaboration as a collective activity. The distribution of knowledge could ensure the continuation of the data use intervention in case of staff-turnover (e.g. Hargreaves & Fink, 2003). Both schools, however, were unprepared for this. Both schools suffered from staff-turnover, with as result that too few knowledgeable teachers remained for continuation of the data use intervention. Another factor that influenced the diffusion of knowledge, is collaboration. Both Fullan (2007) and King (2016) argue that collaboration fosters purposeful interaction, through which data use can be shared and further developed, and through which sustainability can be achieved. At both schools there was, however, insufficient time available for teacher collaboration, with as result that there is a considerable difference in data use between teachers, also between those who were part of the data team.

An aspect of distributed leadership that could have influenced sustainability for the better, is the distribution of additional tasks. Most additional tasks were carried out within work groups in which collaboration went smoothly, and teachers were together in charge of the solution of a particular problem. This division of tasks benefited the school leaders, because it reduced their workload, and it allowed them to focus on other tasks. However, the teachers, and in particular the teachers of school B, felt that they could not take fully autonomous decisions. This feeling was due to the fact that the teachers of school B must first have their decisions approved by the school leader. However, according to the definition of distributed leadership, people are interdependent of each other, and task execution is achieved by reciprocal action and interaction (e.g. Spillane, 2004; Spillane et al., 2004). This implies that collaboration with the school leader – and in this case approval by the school leader – is inevitable, also since he must comply with certain educational standards and the school's goals.

Organizational routines could contribute to the sustainability of data use by establishing a vision, rules, and guidelines for data use. Both schools had a vision for data use. Their policy documents described which goals the schools wanted to achieve with data use. Not all teachers, however, were aware of a vision for data use. The teachers of school A could not define a vision, and there was varying knowledge about a vision for data use between the teachers of school B. Rules and guidelines for data use were nowhere described for both schools. In addition, none of the policy documents of both schools had a separate chapter on data use in which the goals related to data use were clearly described. These goals only became clear after a thorough analysis of the policy documents. To create clarity and prevent differences in data use, it is important that goals, rules, and guidelines for data use are defined and clearly described. At the moment there is a difference in data use between teachers at both schools. Some teachers try to use data in their daily practice, for example for alteration of classroom instruction, whereas others do not. This also applies to the solutions provided by the data team of both schools. Some teachers are actively implementing the solution, while other teachers are less concerned about this. With rules and guidelines for data use, this difference would be less likely to exist.

4.2 Limitations and future research

Some limitations must be considered when interpreting this study and its findings. First of all the results of this research cannot be generalized to all primary schools within the Netherlands, since the sample size was rather small. However, the results could be used for future research, and for theory development with regard to sustainability for data use.

A possible second limitation of this research is the equality within the sample size. School B had more interviewed participants than school A. This had as result that a somewhat more nuanced picture could be sketched for school B than for school A. In addition, school B's school leader was interviewed, whereas school A's was not. The results from school A therefore only came from teachers, which means there is no good representation of the different layers within the organization for this school. For future research, it is recommended to ensure a more equal sample size, both in regular teachers as school leaders.

A third limitation are the amount, and type of documents that were analyzed. It is possible that additional documents, such as progress reports concerning data use and records of staff meetings concerning data use, could give a more complete view of data use within the schools. For future research is therefore recommended to gather more, and different types of documents.

Lastly, it is recommended to use an additional research method to get an even more complete picture of perceived leadership behavior. This study was based on interviews, with the advantage that in-depth knowledge could be collected. However, an additional questionnaire, completed by all teachers and school leaders within the two schools, or additional observational research, could provide a broader, and therefore more complete picture of perceived leadership behavior and the relationship between leadership and sustainability.

4.3 Practical recommendations

Based on the results and conclusion, a number of recommendations can be made for both schools. The first recommendation concerns training in data use for all teachers. At both schools, there is a considerable difference in knowledge, skills, and attitude concerning data use between teachers. Furthermore, both schools suffered from staff-turnover, with as result that too few knowledgeable teachers remained for continuation of the data use intervention. Therefore, teacher training in data use is recommended. Teachers who already have knowledge about data use would benefit from a short course in which the steps of the data use intervention are briefly repeated. Teachers who are new to the data use intervention would benefit from a more intensive course in which the basics of the data use intervention are explained. After these trainings, it is recommended to establish a data team or work group in which the beginners and experts in data use are mixed. This way, beginners could learn from the ones with more expertise. However, training alone will not suffice. It is also highly recommended to establish a vision, rules, and guidelines concerning data use. In addition, since collaboration within both schools was not structured, scheduled time for teacher collaboration is also recommended.

For both schools it is recommended to involve teachers in all decision-making processes, such as implementation of a new intervention, and the development of a vision for data use. The teachers of school B indicated that the new management already tries to involve them more often in these kind of processes. School B is therefore probably more advanced on this aspect than school A. Involvement in these processes is important, since it would generate a feeling of being heard, which increases the chance that teachers will embrace the intervention or vision (Hargreaves, 2004; Stokking, 2002).

Focus on one topic at the time is also recommend for both schools, because although the schools are still in the process of reaching the goals of their developed intervention, both are already trying to expand their intervention by, for example, implementing other cooperative teaching methods. This may not be the best course of action, as a shift in focus would leave their solution to their current problem superficial (Fullan, 2007). In addition, the changes the school had in mind could possibly not be achieved, and possibly, the current results would not last (Fullan, 2004, 2007).

Lastly, at both schools data is mainly collected for the sake of higher student achievement. The gathered policy documents described that the schools use different data sources, but in reality only test-results were analyzed. Learning outcomes alone do not say all about the general functioning of the pupil. A test is just a measurement at a certain point in time that determines where a student is in relation to the learning goal of a particular subject (Stokking, 2002). Additional information gives a more complete picture of the pupil. This way, the curriculum can be better adapted to the pupil's needs, which could

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ultimately result in higher learning outcomes. It is therefore recommended that both schools collect and analyze data from different data sources.

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Appendix A - Consent form of the ethics commission

Universiteit Twente Gedragwetenschappen

COMMISSIE ETHIEK (CE) FACULTEIT GEDRAGSWETENSCHAPPEN

AANVRAAGFORMULIER BEOORDELING

VOORGENOMEN ONDERZOEK DOOR CE, VERSIE 2

1. Achtergrond proefpersonen

1. Betreft het een medisch-wetenschappelijk onderzoek?

NB: Medisch-wetenschappelijk onderzoek wordt in deze context gedefinieerd als 'onderzoek dat als doel heeft het beantwoorden van een vraag op het gebied van ziekte en gezondheid (etiologie, pathogenese, verschijnselen/symptomen, diagnose, preventie, uitkomst of behandeling van ziekte), door het op systematische wijze vergaren en bestuderen van gegevens. Het onderzoek beoogt bij te dragen aan medische kennis die ook geldend is voor populaties buiten de directe onderzoekspopulatie.'

Nee

2. Titel

2b. Datum van de aanvraag

15-04-2018

2a. Wat is de titel van het onderzoek (max. 50 tekens)?

LET OP: Als u van het SONA systeem gebruik gaat maken, moet hier dezelfde titel worden vermeld als de titel die in SONA zal worden gebruikt. Deze titel zal ook zichtbaar zijn voor de proefpersonen (bij gebruik SONA).

Role of leadership on sustainability of data use

3. Contactgegevens onderzoekers/uitvoerders

3a. Voorletters

M.E.

3b. Achternaam

Groenheijde

3c. Vakgroep (indien van toepassing)

0

3d. Studentnummer

1853872

3e. E-mailadres

m.e.groenheijde@student.utwente.nl

3f. Telefoonnummer (tijdens het onderzoek):

0642292093

3g. Indien er meer dan één uitvoerder is, dan graag in het onderstaande

invulblok de gegevens (voorletters/achternaam/emailadres/

telefoonnummers) van alle uitvoerders van het onderzoek

invullen.

-

4. Contactgegevens hoofdonderzoeker/begeleidend docent

LET OP: De eerst verantwoordelijke onderzoeker/begeleidend docent is verantwoordelijk voor de bij deze aanvraag verstrekte gegevens en het onderzoek als geheel en verleent (indien van toepassing) met de aanvraag in dit formulier toestemming aan ANDERE PERSO(O)N(EN) (zie vraag 3) om voornoemde onderzoek met proefpersonen uit te voeren.

Deze eerst verantwoordelijke onderzoeker is een gepromoveerde onderzoeker.

4a. Voorletters

H.C.

4b. Achternaam

Prenger

4c. Vakgroep

ELAN

4d. E-mailadres

h.c.prenger@utwente.nl

4e. Telefoonnummer tijdens het onderzoek

+31534895627

5. Beoogde begin- en einddatum onderzoek

5a. Wat is de beoogde begindatum van het onderzoek?

07-05-2018

5b. Wat is de beoogde einddatum van het onderzoek?

01-09-2018

6. Doel en vraagstelling onderzoek

Geef een duidelijke en voldoende uitgebreide omschrijving van het onderzoek, waarmee een voldoende ethische beoordeling mogelijk is.

6a. Wat is het doel van het onderzoek?

Het doel van het onderzoek is om inzicht te verkrijgen in hoeverre leiderschap van invloed is op de duurzaamheid van data gebruik/onderwijsinnovaties binnen het primair onderwijs. Hiervoor wordt gebruik gemaakt van de data team methode: een methode om docenten te ondersteunen data te gebruiken in het onderwijs om de kwaliteit van het onderwijs en leerling resultaten te verbeteren. Duurzaamheid kan bepaald worden door in hoeverre het een organisatieroutine is geworden. Hierin kunnen ostensieve en performatieve aspecten worden onderscheiden. Om deze aspecten goed te kunnen onderzoeken, wordt er onderzoek uitgevoerd binnen drie verschillende data teams, waarvan er 1 op bestuursniveau is en de twee andere een mix is tussen schoolleiding niveau (directeur, teamleiders) en docentniveau.

6b. Wat is de vraagstelling van het onderzoek?

Wat is de rol van transformationeel en gedeeld leiderschap, aangaande de duurzaamheid van data gebruik binnen basisscholen in Nederland, die werkten met de data team methode?

7. Binnen welk kader wordt het onderzoek uitgevoerd?

7. Het onderzoek wordt uitgevoerd in het kader van een studie. Het gaat specifiek om een: Masterthese

8. Aard van het onderzoek

8. Wat is de aard van het onderzoek?

Onderzoek d.m.v. interviews

Anders, te weten: documentstudie

9. Gebruik Proefpersonen uit SONA

9. Wilt u voor uw onderzoek met proefpersonen gebruik maken van SONA?

Nee

10. Omvang aantal sessies

Probeer een zo goed mogelijke schatting te geven van de benodigde duur van het onderzoek.

LET OP: Het onderzoek moet worden aangevraagd in eenheden van 15 minuten.

Proefpersooncredits worden toegekend per standaard eenheid van 15 minuten.

10a. Zal een proefpersoon zijn/haar deelname afronden in één of meerdere sessie(s)?

In één sessie (vragen 10b en 10c zijn niet van toepassing)

10d. Wat is de totale duur van de sessie(s) in minuten?

45

11. Beoogde aantal proefpersonen, verdeling, inclusie en exclusie criteria

11a. Wat is het beoogde aantal proefpersonen?

9

11b. Wat is de beoogde verdeling man/vrouw onder de proefpersonen?

50/50

11c. Wat zijn de beoogde inclusiecriteria?

-(bovenschools)Schoolbestuur

-schoolleider

-teamleider

-docenten

-primair onderwijs

-leden van een data team dat voorheen begeleid werd door Universiteit Twente

11d. Wat zijn de beoogde exclusiecriteria?

-onderwijsondersteunend personeel

-personeel facilitaire dienst

12. Procedure van het onderzoek

12. Wat moet een proefpersoon die aan dit onderzoek deelneemt doen?

Een duidelijke beschrijving van de procedure van het onderzoek (instructies aan de proefpersonen, te meten variabelen, condities, manipulaties, meetinstrumenten) is vereist.

De respondenten moeten meewerken aan verdiepende interviews. Het gaat om 3 teams die gewerkt hebben volgens de data team methode. Twee teams bestaan uit school- en teamleiders en leerkrachten en één team betreft een bovenschools team. Van beide teams op schoolniveau zal 1 schoolleider en 2 leerkrachten worden geïnterviewd. Van het bovenschoolse team, zullen twee schoolleiders en 1 intern begeleider worden geïnterviewd. Het interview bevat verdiepende vragen over de manier van werken binnen de school, en de processen die onderliggen aan de verschillende veronderstelde beïnvloedende factoren van duurzaamheid. Deze interviews worden op de scholen afgenomen, op een tijdstip in overeenstemming met de respondenten. De interviews duren maximaal 45 minuten en worden anoniem verwerkt.

13. Is een van de onderstaande situaties van toepassing?

n.v.t.

14. Mogelijke gevolgen van het onderzoek voor de proefpersonen.

14a. Kan het onderzoek mogelijk ongemak en/of risico's opleveren voor de proefpersonen?

Nee

14b. Toelichting

Indien Nee: Graag toelichten.

Indien Ja: Leg uit op welke wijze het ongemak en/of de risico's voor de deelnemende proefpersonen gerechtvaardigd worden in het licht van mogelijke opbrengsten van het onderzoek (voor de proefpersonen en/of andere groepen). Leg ook uit welke maatregelen worden getroffen om ongemak en risico's zoveel mogelijk op te vangen of te beperken.

De respondenten wordt gevraagd een interview te geven. Dit geeft hooguit ongemak in de vorm van de tijd die ervoor vrijgemaakt moet worden. Het tijdstip wordt in overleg met de respondent bepaald, wat dit ongemak tot een minimum doet beperken. Fysieke ongemakken of risico's bestaan niet binnen dit onderzoek. De resultaten worden anoniem verwerkt, en het gaat niet om een beoordeling.

15. Wilsbekwaamheid proefpersonen

Wilsbekwaamheid houdt in dat de proefpersonen beschikken over het individuele vermogen om zelfstandig beslissingen te nemen.

Proefpersonen zijn wilsbekwaam als zij:

- 18 jaar of ouder (meerderjarig) zijn, en
- ieder voor zich in staat zijn tot een redelijke beoordeling van het eigen belang ter zake.

Volwassenen die daartoe niet in staat zijn, zijn wilsbekwaam. (zie ook www.ccmo.nl/nl/onderzoek-bij-wilsbekwame-volwassenen)

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15a. Zijn de proefpersonen wilsbekwaam?

Ja

16. Leeftijdscategorie

16. In welke leeftijdscategorie vallen de proefpersonen?

Meerderjarig: 18 jaar en ouder (alleen toestemming proefpersoon nodig)

17. Volledige voorlichting vooraf

17a. Worden proefpersonen (en/of ouders/verzorgers) alvorens zij meedoen aan het onderzoek volledig over doel en inhoud van het onderzoek voorgelicht, bijvoorbeeld door middel van een brochure?

Ja

17b. Toelichting

Indien Ja: op welke wijze? Indien Nee: waarom niet?

Er wordt contact opgenomen met de contactpersonen van elke school. Deze ontvangen mondelinge en/of schriftelijke informatie over het doel, de context en de procedure van het onderzoek. Daarnaast ontvangen alle respondenten voorafgaand aan het interview mondelinge informatie van de onderzoeker van de Universiteit Twente over het doel, context en procedure van het interview. Ook ontvangen zij extra informatie over: de rechten van de geïnterviewde m.b.t. het eventueel terugtrekken van het interview, de anonieme verwerking, en moeten zij toestemming geven voor audio opnames.

17c. Welke informatie ontvangen proefpersonen (en/of ouders/verzorgers) vooraf over het doel en de inhoud van het onderzoek?

U bent lid (geweest) van een data team die volgens de data team methode heeft gewerkt. Om de duurzaamheid van data gebruik en de rol van de schoolleider m.b.t. de duurzaamheid van data gebruik te meten, zou ik graag verdiepende interviews houden met u en andere leden van het data team. Dit interview zal maximaal 45 minuten duren en zal worden ingepland op een voor u schikkend tijdstip. Deze interviews betreffen geen beoordeling van de data team methode, u als persoon, andere personen binnen de organisatie, of de organisatie zelf. De gegevens worden anoniem verwerkt, waardoor individuele resultaten niet herleid kunnen worden. Naast data team leden, zullen ook schoolleiders en het bestuur bevraagd worden om zo de duurzaamheid op alle lagen van de organisatie in kaart te brengen.

18. Informed Consent

18a. Verlenen proefpersonen (en in geval van niet-wilsbekwame proefpersonen: de voogd of ouders/verzorgers) vooraf schriftelijk toestemming voor het onderzoek door middel van een 'Informed Consent' formulier met daarin informatie over doel, aard en duur, risico's en bezwaren?

Het gebruik van een Informed Consent formulier heeft sterk de voorkeur! Een standaard Informed Consent formulier is te vinden op de website van de Commissie Ethiek.

Ja

19. Volledige voorlichting achteraf

19. Op welke manier vindt de debriefing plaats? Kunnen proefpersonen (en/of hun ouders/verzorgers) bijvoorbeeld naderhand nog in contact treden met de onderzoeker over het onderzoek?

Indien Ja: op welke wijze? Indien Nee: waarom niet?

Dit is een praktijkgericht onderzoek. Onderzoeksresultaten worden teruggekoppeld aan de contactpersonen van elke school. Verder ontvangen alle respondenten contactinformatie van de onderzoeker, mochten er achteraf nog vragen of opmerkingen zijn. Ook kunnen zij achteraf besluiten hun deelname terug te trekken uit het onderzoek, wat ze dan kunnen aangeven bij de onderzoeker. Via de contactpersoon van de school, kan er ook contact worden gelegd met de onderzoeker van de UT. De resultaten worden echter niet op individueel of schoolniveau gerapporteerd.

20. Afhankelijkheid proefpersonen

20a. Beschrijf de relatie tussen de hoofdonderzoeker/onderzoekers enerzijds en de proefpersonen anderzijds.

Geen directe relatie aanwezig. De onderzoeker is een onafhankelijke partij, die ook in geenszins te maken heeft met de ontwikkeling van de data team methode.

20b. Zijn de proefpersonen, buiten de context van het onderzoek, in een afhankelijke of ondergeschikte positie t.o.v. de onderzoeker?

Nee

20c. Toelichting Indien Ja: op welke wijze?

-

21. Duidelijkheid t.a.v. terugtrekken

21a. Wordt proefpersonen duidelijk gemaakt dat zij zich te allen tijde zonder verklaring/rechtvaardiging kunnen terugtrekken?

Ja

22. Beloning proefpersonen

LET OP: Alleen voor onderzoek waarbij alleen proefpersoon credits worden gegeven, kan gebruik gemaakt worden maken van het SONA systeem.

22. Welke beloning(en) kunnen proefpersonen ontvangen voor hun deelname aan het onderzoek.

Geen

23. Opslag en verwerking gegevens

23a. Worden gegevens van het onderzoek vertrouwelijk behandeld en anoniem opgeslagen en verwerkt?

Ja

24. Inzage gegevens

24a. Hebben proefpersonen achteraf inzage in hun eigen gegevens?

Ja

Opmerkingen

n.v.t.

Appendix B – Informed consent form

Toestemmingsverklaringformulier

Titel onderzoek: De rol van leiderschap op de duurzaamheid van datagebruik

Verantwoordelijke onderzoeker: M.E. Groenheijde

In te vullen door de deelnemer

Ik verklaar op een voor mij duidelijke wijze te zijn ingelicht over de aard, methode, doel en de risico's en belasting van het onderzoek. Ik weet dat de gegevens en resultaten van het onderzoek alleen anoniem en vertrouwelijk aan derden bekend gemaakt zullen worden. Mijn vragen zijn naar tevredenheid beantwoord.

Ik begrijp dat audio-opnames uitsluitend voor analyse en/of wetenschappelijke presentaties zal worden gebruikt.

Ik stem geheel vrijwillig in met deelname aan dit onderzoek. Ik behoud me daarbij het recht voor om op elk moment zonder opgaaf van redenen mijn deelname aan dit onderzoek te beëindigen.

Naam deelnemer:

Datum: Handtekening deelnemer:

In te vullen door de uitvoerende onderzoeker

Ik heb een mondelinge en schriftelijke toelichting gegeven op het onderzoek. Ik zal resterende vragen over het onderzoek naar vermogen beantwoorden. De deelnemer zal van een eventuele voortijdige beëindiging van deelname aan dit onderzoek geen nadelige gevolgen ondervinden.

Naam onderzoeker:
.....

Datum: Handtekening onderzoeker:

Appendix C – semi-structured interviews

Interviewschema leerkrachten
Op jullie school is een vernieuwing doorgevoerd, namelijk de datateam methode.
Hoe krijg je als leerkracht de gelegenheid om plannen voor de invoering van vernieuwingen te beïnvloeden?
In het geval van de datateam methode. Had je als leerkracht invloed op de invoering van deze vernieuwing?
Zo ja, kan je hier een voorbeeld bij geven?
Wie is er binnen jullie school verantwoordelijk voor het opstellen van de schooldoelen en schoolvisie?
En wie was of is verantwoordelijk voor het opstellen van doelen voor datagebruik?
Hoe zorgt de schoolleider ervoor dat iedereen op één lijn zit bij het vaststellen van de schoolvisie en schooldoelen?
Wat is school breed de visie met betrekking tot datagebruik?
Hoeverre verschilt deze tussen personen?
Hoe communiceert de schoolleider de schooldoelen en visie van de school naar de leerkrachten?
Laat de schoolleider blijken dat hij hoge verwachtingen heeft van de leerkrachten?
Zo ja, kan je hier een voorbeeld bij geven?
Op welke manier laat de schoolleider waardering blijken voor jouw werk?
Bij wie kan je terecht in het geval van persoonlijke of werk gerelateerde problemen?
Hoe gaat de schoolleider om met ideeën en inbreng van leerkrachten?
<i>Als uit antwoord blijkt dat er naar inbreng en ideeën geluisterd, volgende vervolgvraag:</i>
Waarom kan je terug zien dat er iets met deze inbreng wordt gedaan?
Welke mogelijkheden bestaan er binnen de school voor professionele ontwikkeling van leerkrachten?
Indien aanwezig, hoe is dat geregeld, en wie is hier verantwoordelijk voor?

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Hoe moedigt de schoolleider leerkrachten aan om hun werkwijzen te evalueren en te verfijnen waar nodig?
Heb je het gevoel dat de schoolleider je motiveert om data te gebruiken? Zo ja, op welke manier doet hij dat?
Toont de schoolleider bereidheid om zijn/haar eigen werkwijzen te veranderen in het licht van nieuwe inzichten, zoals bijvoorbeeld gevonden door het datateam?
Hoe maakt de schoolleider zelf gebruik van data? <i>Doorvragen als niets wordt verteld over datateam methode:</i> Gebruikt de schoolleider de datateam methode voor het gebruik van data?
Hoe zijn taken en verantwoordelijkheden verspreid onder het personeel? Wie is verantwoordelijk voor het verdelen van deze taken?
Heb je naast lesgeven leidinggevende taken? Zo ja, geeft de schoolleider je in dat geval het gevoel van autonomie voor het maken van eigen beslissingen? Kan je hier een voorbeeld van geven?
Op welke manier werken leerkrachten samen binnen de school? Werken leerkrachten op jullie school vaak samen? Zo ja, kan je aangeven of dit dagelijks/wekelijks of maandelijks het geval is? Welke vormen van samenwerking bestaan er binnen jullie school? <i>(als ze 'vorm' niet snappen benoemen: vooraf bepaald met wie leerkrachten samenwerken (bijv. verschillende bouwen werken samen), vaste momenten van samenwerken, spontane samenwerking)</i> Hoe is dit binnen de datateams?
Op welke manier wordt er ondersteuning geboden aan leerkrachten voor regelmatige interactie onderling?

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Is er op jullie school sprake van regelmatige interactie tussen de directie en de leerkrachten? Zo ja, hoe is deze gestructureerd?
Werken jullie nog met de datateam methode? Zo ja, op welke manier werken jullie met de datateam methode?
Team A: Jullie hebben als interventie gekozen voor professionele ontwikkeling van leerkrachten gedurende vergaderingen, het leveren/ontwikkelen van praktische materialen en voor het bediscussiëren van goede voorbeelden aan de hand van video opnamen tijdens vergaderingen. -In hoeverre is door het nemen van deze stappen jullie doel, het voldoende gebruik maken van activerende werkvormen, bereikt? <i>Als het doel niet bereikt is, volgende vraag:</i> -Welke vervolgstappen hebben jullie hierna genomen om het doel alsnog te bereiken?
Team B: Jullie hebben als interventie gekozen voor leerkrachten voorzien van informatie tijdens leerkracht vergaderingen. -In hoeverre is door het nemen van deze stappen jullie doel, het activeren van voorkennis van de leerlingen, bereikt? <i>Als het doel niet bereikt is, volgende vraag:</i> -Welke vervolgstappen hebben jullie hierna genomen om het doel alsnog te bereiken?
Team C: Jullie hebben als interventie gekozen om in leerkrachtenbijeenkomsten overeenstemming te bereiken over een benadering van vocabulaireonderwijs. -Hebben jullie deze overeenstemming al bereikt? <i>Als het doel niet bereikt is, volgende vraag:</i> -Hebben jullie vervolgstappen genomen om het doel alsnog te bereiken?

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Is de wijze waarop jullie data gebruiken formeel vastgelegd?
Zo ja, in welke documenten/waar?
Is de manier van data gebruik ingebed in de manier van werken in de school?
Zo ja, kan je hier een praktijkvoorbeeld bij geven?
Waarvoor gebruiken jullie data in de praktijk?
Als de volgende aspecten niet terugkomen in het antwoord, daar specifiek naar vragen om te kijken waarvoor data wordt gebruikt: <i>Data om instructieniveau aan te passen, om de oorzaak van problemen (lage scores, niet meekomen met de rest) aan te pakken, leerling-resultaten om jaarlijkse doelen voor schoolverbetering te bepalen.</i>

Interviewschema directie
Op jullie school is een vernieuwing doorgevoerd, namelijk de datateam methode.
Hoe krijgen leerkrachten de gelegenheid om plannen voor de invoering van vernieuwingen te beïnvloeden?
In het geval van de datateam methode. Konden leerkrachten invloed uitoefenen op de invoering van deze vernieuwing?
Zo ja, kan je hier een voorbeeld bij geven?
Wie is er binnen jullie school verantwoordelijk voor het opstellen van de schooldoelen en schoolvisie?
En wie was of is verantwoordelijk voor het opstellen van doelen voor datagebruik?
Hoe zorg je ervoor dat iedereen op één lijn zit bij het vaststellen van de schoolvisie en schooldoelen?
Wat is school breed de visie met betrekking tot datagebruik?
Hoeverre verschilt deze tussen personen?

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Hoe communiceer je de schooldoelen en visie van de school naar de leerkrachten?
Heb je hoge verwachtingen van leerkrachten? Zo ja, laat je wel eens blijken dat je hoge verwachtingen hebt?
Op welke manier laat je waardering blijken voor het werk dat de leerkrachten leveren?
Bij wie kunnen leerkrachten in het geval van persoonlijke of werk gerelateerde problemen terecht?
Hoe ga je als schoolleider om met ideeën en inbreng van leerkrachten? <i>Als uit antwoord blijkt dat er naar inbreng en ideeën geluisterd, volgende vervolgvraag:</i>
Waaraan kunnen leerkrachten zien dat er iets met hun inbreng wordt gedaan?
Welke mogelijkheden bestaan er binnen de school voor professionele ontwikkeling van leerkrachten?
Indien aanwezig, hoe is dat geregeld, en wie is hier verantwoordelijk voor?
Moedig je de leerkrachten aan om hun werkwijzen te evalueren en te verfijnen waar nodig? Zo ja, op welke manier?
Hoe motiveer je de leerkrachten om data te gebruiken? Heb je hier een specifiek voorbeeld bij?
In hoeverre ben je zelf bereid om je eigen werkwijzen te veranderen in het licht van nieuwe inzichten, zoals bijvoorbeeld gevonden door het datateam?
Hoe maak je zelf gebruik van data? <i>Doelvragen als niets wordt verteld over datateam methode:</i> Gebruik je de datateam methode voor het gebruik van data?

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Hoe zijn taken en verantwoordelijkheden verspreid onder het personeel?
Wie is verantwoordelijk voor het verdelen van deze taken?
Hoe zorg je ervoor dat de leerkrachten het gevoel van autonomie hebben bij het uitvoeren van hun extra taken?
Op welke manier werken leerkrachten samen binnen de school?
Werken leerkrachten op jullie school vaak samen? Zo ja, kan je aangeven of dit dagelijks/wekelijks of maandelijks het geval is?
Welke vormen van samenwerking bestaan er binnen jullie school?
<i>(als ze 'vorm' niet snappen benoemen: vooraf bepaald met wie leerkrachten samenwerken (bijv. verschillende bouwen werken samen), vaste momenten van samenwerken, spontane samenwerking)</i>
Hoe is dit binnen de datateams?
Op welke manier wordt er ondersteuning geboden aan leerkrachten voor regelmatige interactie onderling?
Is er op jullie school sprake van regelmatige interactie tussen de directie en de leerkrachten?
Zo ja, hoe is deze gestructureerd?
Werken jullie nog met de datateam methode?
Zo ja, op welke manier werken jullie met de datateam methode?
Team B: Jullie hebben als interventie gekozen voor leerkrachten voorzien van informatie tijdens leerkracht vergaderingen.
-In hoeverre is door het nemen van deze stappen jullie doel, het activeren van voorkennis van de leerlingen, bereikt?
<i>Als het doel niet bereikt is, volgende vraag:</i>
-Welke vervolgstappen hebben jullie hierna genomen om het doel alsnog te bereiken?
Team C: Jullie hebben als interventie gekozen om in leerkrachtenbijeenkomsten overeenstemming te bereiken over een benadering van vocabulaireonderwijs.

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-Hebben jullie deze overeenstemming al bereikt?

Als het doel niet bereikt is, volgende vraag:

-Hebben jullie vervolgstappen genomen om het doel alsnog te bereiken?

Is de wijze waarop jullie data gebruiken formeel vastgelegd?

Zo ja, in welke documenten/waar?

Is de manier van data gebruik ingebed in de manier van werken in de school?

Zo ja, kan je hier een praktijkvoorbeeld bij geven?

Waarvoor gebruiken jullie data in de praktijk?

Als de volgende aspecten niet terugkomen in het antwoord, daar specifiek naar vragen om te kijken waarvoor data wordt gebruikt:

Data om instructieniveau aan te passen, om de oorzaak van problemen (lage scores, niet meekomen met de rest) aan te pakken, leerling-resultaten om jaarlijkse doelen voor schoolverbetering te bepalen.

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Appendix D – Coding scheme

Dimensie	Codering	Uitleg	De te gebruiken vraag	Originele vraag	Bron
<p>Transformationeel leiderschap</p> <p>Reorganiseren van de organisatie (redesigning the organisation)</p>	<p>Dimensie: Reorganiseren van de organisatie</p> <p>Specifiek aspect: Deelname aan de besluitvorming</p>	<p>Reorganiseren van de organisatie houdt in dat een samenhangende schoolcultuur wordt ontwikkeld met gedeelde normen, waarden, overtuigingen en samenwerking om onderwijs te ontwikkelen en waarin deelname aan schoolbeslissingen door iedereen wordt bevordert.</p> <p>Deelname aan besluitvorming: iedereen heeft inbreng in besluiten die worden genomen.</p>	<p>Op jullie school is een vernieuwing doorgevoerd, namelijk de datateam methode.</p> <p>Hoe krijg je als leerkracht de gelegenheid om plannen voor de invoering van vernieuwingen te beïnvloeden?</p> <p>In het geval van de datateam methode. Had je als leerkracht invloed op de invoering van deze vernieuwing?</p> <p>Zo ja, kan je hier een voorbeeld bij geven?</p>	<p>I can influence the plans being made at our school for the implementation of innovations</p>	<p>Geijssel, 2001</p>
	<p>Dimensie: Reorganiseren van de organisatie</p> <p>Specifiek aspect: het creëren van productieve onderlinge relaties</p>	<p>Door het creëren van goede onderlinge relaties, kan er doelgerichte interactie tussen individuen van verschillende lagen van de organisatie plaatsvinden, waardoor de vernieuwing kan worden gedeeld en uiteindelijk verder worden ontwikkeld, waardoor duurzaamheid kan worden bereikt.</p>	<p>Op welke manier wordt er ondersteuning geboden aan leerkrachten voor regelmatige interactie onderling?</p>	<p>Our school administrators provide organizational support for teacher interaction on a regular basis</p>	<p>Leithwood & Jantzi, 1999</p>
	<p>Dimensie:</p>	<p>Door het creëren van goede onderlinge relaties, kan er</p>	<p>Is er op jullie school sprake van regelmatige</p>	<p>X</p>	<p>X</p>

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	<p>Reorganiseren van de organisatie</p> <p>Specifiek aspect: het creëren van productieve onderlinge relaties</p>	<p>doelgerichte interactie tussen individuen van verschillende lagen van de organisatie plaatsvinden, waardoor de vernieuwing kan worden gedeeld en uiteindelijk verder worden ontwikkeld, waardoor duurzaamheid kan worden bereikt.</p>	<p>interactie tussen de directie en de leerkrachten?</p> <p>Zo ja, hoe is deze gestructureerd?</p>		
<p>Transformationeel leiderschap</p> <p>Richting geven (Setting directions)</p>	<p>Dimensie: Richting geven</p> <p>Specifiek aspect: Ontwikkelen en delen van de visie en doelen van de school.</p>	<p>Richting geven is belangrijk voor de schoolontwikkeling. De schoolleider ontwikkelt een gedeelde visie met bijbehorende doelen en probeert zijn/haar personeel te inspireren en te motiveren om de organisatiedoelen te bereiken.</p>	<p>Wie is er binnen jullie school verantwoordelijk voor het opstellen van de schooldoelen en schoolvisie?</p> <p>En wie was of is verantwoordelijk voor het opstellen van doelen voor datagebruik?</p>	X	X
	<p>Dimensie: Richting geven</p> <p>Specifiek aspect: Ontwikkelen en delen van de visie en doelen van de school.</p>	<p>Het motiveren van leerkrachten betekent het aanmoedigen van leerkrachten om deel te nemen aan de nieuwe interventie. Leerkrachten moeten zich bewust worden van het belang en de inhoud van de datateam methode en zich aangemoedigd voelen om deze in de praktijk te brengen (bijv. Schildkamp et al., 2014a; Stokking, 2002).</p>	<p>Heb je het gevoel dat de schoolleider je motiveert om data te gebruiken?</p> <p>Zo ja, op welke manier doet hij dat?</p>	X	X
	<p>Dimensie: Richting geven</p>		<p>Hoe zorgt de schoolleider ervoor dat iedereen op één</p>	<p>The school leader works toward whole</p>	<p>Leithwood & Jantzi, 1999</p>

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	Specifiek aspect: Ontwikkelen en delen van de visie en doelen van de school.		lijn zit bij het vaststellen van de schoolvisie en schooldoelen?	staff consensus in establishing priorities for school goals	
	Dimensie: Richting geven Specifiek aspect: Ontwikkelen en delen van de visie en doelen van de school.		Wat is school breed de visie met betrekking tot datagebruik? Hoe verre verschilt deze tussen personen?	X	X
	Dimensie: Richting geven Specifiek aspect: Ontwikkelen en delen van de visie en doelen van de school.		Hoe communiceert de schoolleider de schooldoelen en visie van de school naar de leerkrachten?	The school leader communicates school mission to staff and students	Leithwood & Jantzi, 1999
	Dimensie: richting geven. Specifiek aspect: Het hebben van hoge verwachtingen	De schoolleider heeft organisatorische doelen die hij wil behalen in het belang van de verdere schoolontwikkeling. Hij verwacht van zijn leerkrachten dat ze deze doelen behalen en spreekt daarom deze verwachtingen uit naar de leerkrachten.	Laat de schoolleider blijken dat hij hoge verwachtingen heeft van de leerkrachten? Zo ja, kan je hier een voorbeeld bij geven?	The school leader has high expectations for us as professionals.	Leithwood & Jantzi, 1999
Transformationeel leiderschap.	Dimensie: ontwikkeling van anderen.	Ontwikkeling van anderen betekent dat de leider actief	Op welke manier laat de schoolleider waardering blijken voor jouw werk?	The school leader provides moral support by making	Leithwood & Jantzi, 1999

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<p>Ontwikkeling van anderen (developing people)</p>	<p>Specifiek aspect: Aandacht voor het individu</p>	<p>betrokken is bij de leerkrachten.</p> <p>Aandacht voor het individu houdt in dat de leider geïndividualiseerde ondersteuning biedt. Hij richt zich daarbij op het begrijpen van de behoeften van elke leerkracht en houdt rekening met de gevoelens, ideeën en meningen van de leerkrachten bij het nemen van beslissingen.</p>		<p>me feel appreciated for my contribution.</p>	
	<p>Dimensie: ontwikkeling van anderen.</p> <p>Specifiek aspect: Aandacht voor het individu</p>		<p>Bij wie kan je terecht in het geval van persoonlijke of werk gerelateerde problemen?</p>	<p>Leadership in this school responds to my personal and professional concerns with consideration / If I have problems concerning my work, I can count on my superiors to support me.</p>	<p>Leithwood, Aitken & Jantzi, 2001/ Geijssel, 2001.</p>
	<p>Dimensie: ontwikkeling van anderen.</p> <p>Specifiek aspect: Aandacht voor het individu</p>		<p>Hoe gaat de schoolleider om met ideeën en inbreng van leerkrachten?</p> <p><i>Als uit antwoord blijkt dat er naar inbreng en ideeën geluisterd, volgende vervolgvraag:</i></p>	<p>The school leader listens carefully to the ideas of members of the team / My superiors take my educational opinions seriously</p>	<p>Geijssel, 2009, Geijssel et al., 2001</p>

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			Waaraan kan je terug zien dat er iets met deze inbreng wordt gedaan?		
	<p>Dimensie: ontwikkeling van anderen.</p> <p>Specifiek aspect: Intellectuele stimulering/uitdaging</p>	<p>Ontwikkeling van anderen betekent dat de leider actief betrokken is bij de leerkrachten.</p> <p>Intellectuele stimulering houdt in dat de schoolleider leraren stimuleert en aanmoedigt om vraagtekens te zetten bij bestaande methoden en ideeën en dat de schoolleider leerkrachten stimuleert hun taken effectiever uit te voeren.</p>	<p>Welke mogelijkheden bestaan er binnen de school voor professionele ontwikkeling van leerkrachten?</p> <p>Indien aanwezig, hoe is dat geregeld, en wie is hier verantwoordelijk voor?</p>	<p>My superiors create opportunities for teachers to develop professionally / Leadership in this school provides for extended training to develop my knowledge and skills.</p>	<p>Geijssel, 2001/ Leithwood, Aitken & Jantzi, 2001</p>
	<p>Dimensie: ontwikkeling van anderen.</p> <p>Specifiek aspect: Intellectuele stimulering/uitdaging</p>		<p>Hoe moedigt de schoolleider leerkrachten aan om hun werkwijzen te evalueren en te verfijnen waar nodig?</p>	<p>Leadership in this school encourages us regularly to evaluate our progress towards achievement of school goals.</p>	<p>Leithwood & Jantzi, 1999</p>
	<p>Dimensie: ontwikkeling van anderen</p> <p>Specifiek aspect: Het goede voorbeeld laten zien</p>		<p>Toont de schoolleider bereidheid om zijn/haar eigen werkwijzen te veranderen in het licht van nieuwe inzichten, zoals bijvoorbeeld gevonden door het datateam?</p>	<p>The school leader demonstrates a willingness to change own practices in light of new understandings.</p>	<p>Leithwood & Jantzi, 1999</p>
	<p>Dimensie: ontwikkeling van anderen</p> <p>Specifiek aspect: Het</p>		<p>Hoe maakt de schoolleider zelf gebruik van data?</p>	<p>The school leader models problem-solving techniques</p>	<p>Leithwood & Jantzi, 1999</p>

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	goede voorbeeld laten zien		<p><i>Doorvragen als niets wordt verteld over datateam methode:</i></p> <p>Gebruikt de schoolleider de datateam methode voor het gebruik van data?</p>	that I can readily adapt for my work.	
Gedeeld leiderschap	Dimensie: Taakverdeling	De schoolleider bezit niet alle kennis (bv. Fullan, 2007; Spillane, 2005), daarom zullen sommige taken worden toegewezen aan anderen met meer ervaring of kennis op dat gebied.	<p>Hoe zijn taken en verantwoordelijkheden verspreid onder het personeel?</p> <p>Wie is verantwoordelijk voor het verdelen van deze taken?</p>	How is leadership distributed? Who enacted these leadership activities?	Ho, Chen & Ng, 2016
	Dimensie: Taakverdeling	<p>De schoolleider bezit niet alle kennis (bv. Fullan, 2007; Spillane, 2005), daarom zullen sommige taken worden toegewezen aan anderen met meer ervaring of kennis op dat gebied.</p> <p>Deze personen moeten op hun beurt weten wat van hen wordt verwacht, moeten een verantwoordelijkheidsgevoel hebben en moeten het gevoel hebben dat zij autonome beslissingen kunnen nemen (Schildkamp et al., 2014a).</p>	<p>Heb je naast lesgeven leidinggevende taken?</p> <p>Zo ja, geeft de schoolleider je in dat geval het gevoel van autonomie voor het maken van eigen beslissingen?</p> <p>Kan je hier een voorbeeld van geven?</p>	The school leader provides an appropriate level of autonomy for us in our own decision making	Leithwood & Jantzi, 1999.

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	Dimensie: Samenwerking	Gedeeld leiderschap is een vorm van leiderschap waarbij leiderschap wordt verdeeld over een aantal personen in formele of informele rollen, die door wederzijdse acties en interacties met elkaar én de omgeving de school samen leiden, en waarbij de samenwerking geen samenvoeging is van de werk van verschillende personen, maar een collectieve activiteit die gebaseerd is op een gedeelde visie en gedeelde doelen. (Gebaseerd op: Copland, 2003; Elmore, 2000; Gronn, 2002; Harris, 2005; Spillane, 2005; 2006, Spillane, et al., 2001; Spillane, Halverson & Diamond, 2004; Woods, et al., 2004) .	Op welke manier werken leerkrachten samen binnen de school? Werken leerkrachten op jullie school vaak samen? Zo ja, kan je aangeven of dit dagelijks/wekelijks of maandelijks het geval is? Welke vormen van samenwerking bestaan er binnen jullie school? <i>(als ze 'vorm' niet snappen benoemen: vooraf bepaald met wie leerkrachten samenwerken (bijv. verschillende bouwen werken samen), vaste momenten van samenwerken, spontane samenwerking)</i> Hoe is dit binnen de datateams?	X	X
Duurzaamheid (Sustainability)	Dimensie: Blijvende verandering	Duurzaamheid betekent een blijvende verbetering, waarbij voortdurende ontwikkeling wordt nagestreefd (vb. Fullan, 2007)	Werken jullie nog met de datateam methode? Zo ja, op welke manier werken jullie met de datateam methode?	X	X
	Dimensie: Blijvende verandering		Team A: Jullie hebben als interventie gekozen voor professionele ontwikkeling		

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			<p>van leerkrachten gedurende vergaderingen, het leveren/ontwikkelen van praktische materialen en voor het bediscussiëren van goede voorbeelden aan de hand van video opnamen tijdens vergaderingen.</p> <p>-In hoeverre is door het nemen van deze stappen jullie doel, het voldoende gebruik maken van activerende werkvormen, bereikt?</p> <p><i>Als het doel niet bereikt is, volgende vraag:</i></p> <p>-Welke vervolgstappen hebben jullie hierna genomen om het doel alsnog te bereiken?</p> <p>Team B: Jullie hebben als interventie gekozen voor leerkrachten voorzien van informatie tijdens leerkracht vergaderingen.</p> <p>-In hoeverre is door het nemen van deze stappen jullie doel, het activeren</p>		
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			<p>van voorkennis van de leerlingen, bereikt?</p> <p><i>Als het doel niet bereikt is, volgende vraag:</i></p> <p>-Welke vervolgstappen hebben jullie hierna genomen om het doel alsnog te bereiken?</p> <p>Team C: Jullie hebben als interventie gekozen om in leerkrachtenbijeenkomsten overeenstemming te bereiken over een benadering van vocabulaireonderwijs.</p> <p>-Hebben jullie deze overeenstemming al bereikt?</p> <p><i>Als het doel niet bereikt is, volgende vraag:</i></p> <p>-Hebben jullie vervolgstappen genomen om het doel alsnog te bereiken?</p>		
	<p>Dimensie: Organisatorische routines</p>	<p>Dimensie: Een organisatorische routine is 'een repetitief, herkenbaar patroon van onderling</p>	<p>Is de wijze waarop jullie data gebruiken formeel vastgelegd?</p>	<p>Data use for school improvement/for accountability/for instruction is</p>	<p>Hubers, 2016</p>

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	<p>Specifiek aspect: Ostensieve aspect</p>	<p>afhankelijke acties, uitgevoerd door meerdere actoren' (Feldman & Pentland, 2003, p.95).</p> <p>Specifiek aspect: Het ostensieve aspect belichaamt de structuur en daarmee de regels van de routine</p>	<p>Zo ja, in welke documenten/waar?</p>	<p>anchored in our policy documents</p>	
	<p>Dimensie: Organisatorische routines</p> <p>Specifiek aspect: Ostensieve aspect</p>		<p>Is de manier van data gebruik ingebed in de manier van werken in de school?</p> <p>Zo ja, kan je hier een praktijkvoorbeeld bij geven?</p>	<p>X</p>	<p>X</p>
	<p>Dimensie: Organisatorische routines</p> <p>Specifiek aspect: Performatieve aspect</p>	<p>Dimensie: Een organisatorische routine is 'een repetitief, herkenbaar patroon van onderling afhankelijke acties, uitgevoerd door meerdere actoren' (Feldman & Pentland, 2003, p.95).</p> <p>Specifiek aspect: Performatieve aspect: De acties die betrokkenen ondernemen op een bepaalde tijd en plaats (Feldman & Pentland, 2003</p>	<p>Waarvoor gebruiken jullie data in de praktijk?</p> <p>Als de volgende aspecten niet terugkomen in het antwoord, daar specifiek naar vragen om te kijken waarvoor data wordt gebruikt: <i>Data om instructieniveau aan te passen, om de oorzaak van problemen (lage scores, niet meekomen met de rest) aan te pakken, leerling-resultaten om jaarlijkse doelen voor</i></p>	<p>X</p>	<p>X</p>

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			<i>schoolverbetering te bepalen.</i>		
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