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Differences in state- and district-level stakeholders’ perceptions of curriculum coherence and school impact in national curriculum reform

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Abstract

Purpose – Shared understandings of curriculum reform within and between the levels of the educational system are suggested to be crucial for the reform to take root. The purpose of this paper is to explore variation in perceived curriculum coherence and school impact among state- and district-level stakeholders.

Design/methodology/approach – The participants (n = 666) included state- and district-level stakeholders involved in a national curriculum reform in Finland. Latent profile analysis was employed to identify profiles based on participants’ perceptions of the core curriculum’s coherence and the reform’s impact on school development.

Findings – Two profiles were identified: high coherence and impact, and lower consistency of the intended direction and impact. State-level stakeholders had higher odds of belonging to the high coherence and impact profile than their district-level counterparts.

Practical implications – The results imply that more attention needs to be paid in developing a shared and coherent understanding particularly of the intended direction of the core curriculum as well as the reform’s effects on school-level development among state- and district-level stakeholders.

Originality/value – The study contributes to the literature on curriculum reform by shedding light on the variation in perceived curriculum coherence and school impact of those responsible for a large-scale national curriculum reform process at different levels of the educational system.

Keywords Curriculum reform, Latent profile analysis, Curriculum coherence, School impact

Paper type Research paper

Introduction

It has been proposed that in order to promote curriculum reform implementation and educational practitioners’ ownership over the reform, the curriculum developers and stakeholders need to build a sufficiently shared understanding of the functions of the
Curriculum and its meaning for the schools’ mission (see Fullan, 2007; Ornstein and Hunkins, 2004; Pietarinen et al., 2017). At the same time, there is evidence of educational administrators, stakeholders, principals and teachers often differing in their understanding and response to educational change and curriculum reforms (Desimone, 2006; Louis and Robinson, 2012; Ng, 2009; Spillane, 1998; Timperley and Parr, 2005; Yuen et al., 2012). Perceiving the curriculum as a coherent whole is particularly important for those in charge of developing and implementing the curriculum because it provides grounding for sustained goal setting and reform implementation. While coherence in terms of alignment and continuity within and between the elements of the curriculum (e.g. Newmann et al., 2001; Schmidt et al., 2005; Smith et al., 1998) and in terms of providing a coherent basis for constructing shared understandings of the curriculum’s aim and shared principles and values for teaching and learning (e.g. Bryk, 2010; Hallinger and Heck, 2002; Newmann et al., 2001) is suggested to be crucial to support pupil learning and school development, research on how curriculum coherence is perceived by different stakeholders is scarce. A few studies have implied that teachers’ perceptions of school-level coherence are related to pupil achievement (e.g. Newmann et al., 2001) and that perceptions of coherence between policies, goals and activities within and between schools and the educational system are important for reform to take root (e.g. Allen and Penuel, 2015; Louis and Robinson, 2012; Russell and Bray, 2013). Our earlier studies suggested that state- and district-level stakeholders’ perceptions of core curriculum coherence are related to the expected school-level impact of a curriculum reform (Pietarinen et al., 2017; Sullanmaa et al., submitted). This implies that perceived curriculum coherence is an important determinant of facilitating change in schools. State- and district-level stakeholders do not, however, comprise a single entity, and differences are likely to occur both within and between the groups.

The present study aims to contribute to filling this gap in the literature by exploring how state- and district-level stakeholders involved in Finnish national core curriculum reform have perceived curriculum coherence and the reform’s impact on school-level development. Variation in the stakeholders’ perceptions is examined by discerning latent profiles, that is, detecting subgroups of educational stakeholders based on their individual patterns of perceived curriculum coherence and expectations of the reform’s school-level impact. Examining similarities and differences in perceived curriculum coherence among the stakeholders at different levels provides a systemic understanding of how such coherence is achieved in a large-scale curriculum reform process. Accordingly, the study contributes to the literature on curriculum development by providing a novel understanding of the variation in the perceptions of stakeholders in charge of the development work.

Curriculum coherence

A coherent curriculum entails unity and connectedness among the aims, content, instructional practices, learning experiences and assessments (Beane, 1995; Kelly, 2009; Smith et al., 1998). It entails a holistic and integrative approach to curriculum development, focusing on the learners and their purposeful learning experiences (Beane, 1995; Ornstein and Hunkins, 2004). Curriculum coherence also includes a structural approach focusing on the alignment and the coherent organization of subject matter (e.g. Schmidt et al., 2005; Squires, 2009). This study explores how different educational stakeholders have perceived the coherence of the core curriculum that aims to guide the district-level curricula and further governs the development of the national basic education system.

Curriculum coherence is suggested to be comprised of three interrelated components: consistency of the intended direction, referring to the clarity of the goals and roles of the teachers and schools, as well as the ability to support the teaching of the essential material; an integrative approach to teaching and learning, entailing the encouraging of teachers to use activating teaching methods along with assessment that supports
learning, as well as support for the harmonization of teaching; and alignment between objectives, content and assessment, characterized by continuity and connectivity within the curriculum (Sullanmaa et al., submitted).

Consistency of the intended direction is important for facilitating the shared ownership of clear aims in the educational system. Schools are facing multiple demands from within as well as outside the schools, for instance from parents and the wider community (see Honig and Hatch, 2004). Hence, it is essential that the curriculum provides grounding for navigating between the contradictory demands and that it establishes a clear direction for school practice and its development, as well as realizes the practical outcomes and benefits of the reform (Ornstein and Hunkins, 2004; Timperley and Parr, 2005). It has been suggested that the curriculum needs a shared and consistent purpose, which creates coherence in diverse school-level activities (Fullan, 2007). Schools that successfully improve their practice have a shared sense of direction among the school community (Hallinger and Heck, 2002; Newmann et al., 2001; Reezigt and Creemers, 2005). In addition, without clarity about the curriculum reform’s aims and main message, the local implementing stakeholders might gain very different understandings of the change (Spillane and Callahan, 2000; Timperley and Parr, 2005). For instance, teachers might not change their classroom practices accordingly due to not fully understanding the underlying principles of the reform (e.g., Ng, 2009) or insufficient clarity about changes in their roles. Consistency of the intended direction, however, does not mean that the curriculum should be implemented similarly in all contexts (also see Buchmann and Floden, 1992). It is crucial to communicate the key purposes and underlying principles of the curriculum (Spillane et al., 2002); yet, an adaptive approach also recognizes contextual conditions at the school level and allows for diversity in the implemented curriculum (Buchmann and Floden, 1992; Darling-Hammond, 1998; Ornstein and Hunkins, 2004).

A coherent curriculum also provides an integrative approach to teaching and learning that is consistent with the educational values, objectives and content of the curriculum. Successful reforms focus on developing the core school practices of teaching and learning as well as altering teachers’ beliefs, norms and pedagogical practices (Coburn, 2003; Darling-Hammond, 1998; Elmore, 1996). These core beliefs include teachers’ understanding about how students learn, the nature of knowledge and subject matter, and how this is shown in their teaching practice (Coburn, 2003; Elmore, 1996). A curriculum reform that aims to impact the core of schooling requires a shared understanding and commitment to the reform principles and goals of teaching and learning, as well as school-level capacity building and support for the new practices at the local level (Darling-Hammond, 1998; Fullan, 2009; McLaughlin, 1998; Porter et al., 2015). The administrators and stakeholders involved in curriculum development have a key role in developing coherence in teaching and learning, and in facilitating commitment to and support for this development throughout the various levels of the educational system (see Cantlon et al., 1990; Dutro et al., 2002; Porter et al., 2015; Spillane, 2004).

Curriculum coherence also includes alignment and continuity within and between the curriculum’s objectives, content, teaching methods and assessments. Alignment is essential for the construction of integrated, consistent and meaningful learning experiences that build sequentially and reinforce one another (Beane, 1995; Fortus et al., 2015; Schmidt et al., 2005). Alignment between goals, instruction and assessments (e.g., Squires, 2009, 2012), and the sequencing and progression of content within and across grades (e.g., Fortus et al., 2015; Schmidt et al., 2005; Shwartz et al., 2008) have been shown to improve pupils’ deep learning and school achievement. Perceptions regarding a curriculum’s alignment and continuity are also important among teachers and other educational stakeholders for understanding and accepting the curriculum as a sensible whole (see Vitikka et al., 2012). Alignment as a part of curriculum coherence needs to be considered simultaneously with the curriculum’s intended
direction and the framework for developing teaching and learning. Hence, all three components of coherence in the steering core curriculum are assumed to contribute to the curriculum reform's impact on the school-level development work.

Function of coherence in curriculum reform
The effects of curriculum reform on school-level practice and development, particularly on a large scale or long-term basis (see, e.g. Coburn, 2003; Elmore, 1996), depend on the interaction between the stakeholders at different levels of the educational system and their understanding of the curriculum reform (e.g. Cheung and Wong, 2011; Fernandez et al., 2008; Fullan, 2007; Ng, 2009; Timperley and Parr, 2005; Yuen et al., 2012). High levels of perceived coherence in the core curriculum have been shown to contribute to district-level stakeholders' expectations of the impact that the curriculum reform will have on school-level development, by directing the development work toward solving problems faced by schools, and committing teachers to the development work (Sullanmaa et al., submitted).

However, the stakeholders may differ regarding the extent to which they perceive the curriculum as a coherent whole and believe in its impact on the school-level development, how much time and effort they are ready to invest in the reform implementation, and what they aim to emphasize when developing the local curriculum (Cantlon et al., 1990; Dutro et al., 2002; McLaughlin, 1998; Spillane, 1998). The various stakeholders' expectations concerning the reform's impact are influenced by their understanding of the curriculum reform, their role in the educational system, their expertise and previous experience and local values (Spillane et al., 2002; Spillane, 2004). This means that the curriculum reform is reconstructed at each level of the educational system as it is interpreted by different stakeholders and then mediated to the next level (Coburn, 2005; Darling-Hammond, 1998; Louis and Robinson, 2012; Nordholm, 2016; Porter et al., 2015). Thus, coherent perceptions about the core curriculum and beliefs about the reform's impact on school-level development among stakeholders at different levels of the system are essential in facilitating school development. Due to the different positions and activities that the stakeholders and practitioners across the educational system have in curriculum development work, variation in perceived curriculum coherence and beliefs about the reform's impact on school-level development is likely to occur (see Desimone, 2006; Louis and Robinson, 2012; Spillane, 1998). Still, little is known about how curriculum coherence is perceived by those involved in national or district-level curriculum development, how the experiences of stakeholders at different levels are related, or how the possible differences could be bridged to achieve stronger agreement and coherence.

Curriculum reform in Finland
The educational system in Finland aims to facilitate stakeholders' coherent understandings about the curriculum by involving stakeholders from different levels of the educational system in the curriculum reform process and by emphasizing collaboration and shared goals among educational administrators, stakeholders and practitioners in the reform orchestration (Salonen-Hakomäki et al., 2016; Tikkanen et al., 2017; Vitikka et al., 2012). The national core curriculum, based on the Basic Education Act, is part of the Finnish educational steering system which outlines the mission, key objectives and core content of basic education (Vitikka et al., 2012). The Finnish National Agency for Education (formerly the Finnish National Board of Education) is responsible for orchestrating reform of the core curriculum approximately every 10 years. The most recent reform was launched in 2012. The Finnish National Agency for Education invited various stakeholders such as municipal education providers, teacher educators, researchers, principals and teachers to participate in working on different parts and content of the core curriculum. These state-level working groups were also responsible for writing the final core curriculum document, completed at

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the end of 2014. The core curriculum includes the main objectives and core content, and represents an outline to be collaboratively developed for local curricula by the districts and municipalities (Vitikka et al., 2012). It functions as a tool for developing a shared understanding of the values and aims of teaching and learning, and as a basis upon which teachers can build their pedagogical practices (Vitikka et al., 2012).

The local education providers in Finland have autonomy in organizing education. In the reform process, they are responsible for constructing new local curricula within the framework of the reformed national core curriculum. Generally, the local curriculum is constructed as a joint curriculum for a district or for an individual municipality. The district-level curriculum is developed in collaboration between municipal actors and school staff. The district-level working groups construct a local curriculum that emphasizes the core curriculum content from a local perspective, taking into account contextual factors such as local needs and traditions (Finnish National Board of Education, 2014). The local curricula were to be finished by the spring of 2016 and implementation in schools began in stages in the fall of 2016.

Quality, equity and trust are some of the basic values on which school development is based in Finland (see Sahlberg, 2015). Accordingly, the core curriculum process aims to promote agreement between educational stakeholders at different levels on goals and expectations regarding the curriculum reform (Pietarinen et al., 2017), and the purpose of the local autonomy of the curriculum implementation is to facilitate the commitment of local stakeholders (Vitikka et al., 2012). Hence, coherence-making in the curriculum reform process is particularly important in the Finnish educational system, which emphasizes the autonomy of schools and teachers and relies on them to engage in active school development work to put the national curriculum reform into practice.

**Aim of the study**

The aim of this study was to explore state- and district-level stakeholders’ perceptions of curriculum coherence and school impact in the context of Finnish national curriculum reform. Subgroups of stakeholders were identified based on the perceived curriculum coherence and school impact using latent profile analysis (LPA). It has been suggested that a certain level of agreement about a curriculum’s meaning, goals and effects between the state and district levels is key to facilitating curriculum reform implementation and promoting school-level ownership and development (see, e.g. Dutro et al., 2002; Fullan, 2007; Timperley and Parr, 2005). Accordingly, the following hypotheses were tested:

**H1.** Different profiles based on perceived curriculum coherence, consisting of consistency of the intended direction, integrative approach to teaching and learning, alignment between objectives, content and assessments, and perceived school impact can be detected.

**H2.** The state-level administrators in charge of constructing the national core curriculum, and the district-level stakeholders involved in the development of local curricula on the basis of the national core curriculum, differ from each other in terms of the profile memberships (e.g. Desimone, 2006; Spillane, 1998).

**Methods**

**Participants**

The participants comprised two cohorts: Cohort I: state-level stakeholders responsible for the development of the core curriculum, and Cohort II: district-level stakeholders involved in the construction of the local curricula.

Cohort I: the state-level stakeholders (n = 116) were accountable for constructing the national core curriculum in Finland as members of state-level working groups. The participants were comprised of school teachers (n = 51, 44 percent), university teachers
(n = 30, 26 percent), association representatives (n = 7, 6 percent) and officials from the Finnish National Agency for Education and Ministry of Education and Culture (n = 22, 19 percent). The data were collected in 2014 while the working groups were finalizing the national core curriculum document. The majority of respondents were women (n = 85, 73 percent) and the minority men (n = 29, 25 percent). For 75 percent (n = 87) of the participants, this was the first time they had been involved in the core curriculum reform’s state-level working groups. The mean age of the participants was 51.53 years (SD = 7.82; Min./Max. = 32/65).

Cohort II: the district-level stakeholders (n = 550) were responsible for the local curriculum development as members of district-level curriculum development working groups in 12 case districts in Finland. The municipal education providers were responsible for forming the working groups, and the process was similar in all the case districts; however, the case districts organized the local curriculum process in different ways, varying from collaboration among several neighboring municipalities to carrying out the reform work within an individual municipality. The participants were from 54 municipalities in Finland, representing 17 percent of all Finnish municipalities (54/320[1]), and included urban and rural municipalities of different size throughout Finland. Hence, the case districts represented different ways of organizing the local curriculum process as well as different types of municipalities in Finland. Most of the participants were teachers (n = 403, 73.3 percent), school leaders and principals (n = 101, 18.4 percent), and also included other school staff such as student counselors, and municipal administrators and coordinators (n = 28, 5.1 percent). The data were collected from the district-level working groups during the spring of 2016 when the local curricula were being finalized. As in the state-level group, the majority of respondents at the district level were women (n = 408, 74 percent) and the minority men (n = 131, 24 percent). At the district level, 61 percent (n = 335) of participants had previous experience in curriculum development work. The mean age of the participants was 46.03 years (SD = 8.81; Min./Max. = 26/71).

Measures
Both participant cohorts completed the Curriculum Reform Inventory (Pietarinen et al., 2017; Sullanmaa et al., submitted), including the same measures for curriculum coherence and school impact. The survey and measurements were developed for the research project (Pietarinen et al., 2017), and the scales were initially pre-tested and commented on by two experienced stakeholders involved in the core curriculum process. The curriculum coherence scale (including 3 factors and 17 items) was designed to measure the perceived core curriculum coherence in terms of the core curriculum’s goals, purpose, content and the development of teaching and learning (Pietarinen et al., 2017). It includes three factors (Sullanmaa et al., submitted): first, the consistency of the intended direction (CON, six items, \( \alpha = 0.87 \)), that entails clarifying and supporting the roles and duties of the teacher and school as well as successfully summing up the most important goals; second, the integrative approach to teaching and learning (INT, four items, \( \alpha = 0.74 \)), that includes encouraging teachers to use activating teaching methods and assessment that supports learning, as well as supporting the harmonization of teaching; and third, the alignment between objectives, content and assessment (ALI, seven items, \( \alpha = 0.84 \)), that includes continuity within subjects, acknowledging pupils’ age range, as well as the alignment between goals, subjects, content, teaching methods and assessment.

The school impact scale (SCI, six items, \( \alpha = 0.88 \)) measures the perceived impact of the curriculum reform process on further school-level development work (Pietarinen et al., 2017). The scale used in this study was adapted from the scale developed by Pietarinen et al. (2017). It entails, for instance, maintaining active development work in schools, committing teachers to the development work and directing the development work to resolve problems observed in the daily life of the school. All items on the scales were rated on a seven-point
Likert scale ranging from 1 (fully disagree) to 7 (fully agree) (see the Appendix for scales and items). The percentage of missing values per item ranged from 0.8 to 3.6.

Measurement invariance between the two participant cohorts – state-level stakeholders ($n = 116$) and district-level stakeholders ($n = 550$) – was tested in terms of the curriculum coherence and school impact scales. The configural model and the models for metric and scalar invariance were compared by examining changes in CFI, TLI and RMSEA (Chen, 2007; Cheung and Rensvold, 2002; Wang and Wang, 2012). Full metric invariance was supported for the curriculum coherence and school impact scales across the two participant cohorts. Partial scalar invariance with two non-invariant intercepts in the curriculum coherence scale and two non-invariant intercepts in the school impact scale was also supported. The invariance of factor loadings and most of the intercepts was considered a sufficient basis for the further LPA (Byrne et al., 1989; Cheung and Rensvold, 2002). The scores for each factor were obtained by calculating the mean of the factor indicators. The correlations and descriptive statistics for the mean scores of curriculum coherence and school impact for each participant cohort are shown in Table I.

The mean scores of the three components of curriculum coherence and school impact seemed to be slightly higher among the state-level stakeholders (Table I). In both participant cohorts, the integrative approach to teaching and learning was perceived as the highest, and consistency of the intended direction as the lowest, of the dimensions of core curriculum coherence. Among the state-level stakeholders, the minimum mean score value for the alignment between objectives content, and assessment was rather high compared to the other curriculum coherence components. Correlations between the curriculum coherence components and school impact were positive and high, as expected.

### Analysis

A LPA was employed to detect subgroups of individuals based on their perceptions of the core curriculum and the reform process in terms of curriculum coherence and school impact. LPA is a person-centered approach focusing on the response patterns of individuals instead of relations among variables (Berlin et al., 2014; Muthén and Muthén, 1998–2015). It is used

<table>
<thead>
<tr>
<th></th>
<th>CON</th>
<th>INT</th>
<th>ALI</th>
<th>SCI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State-level stakeholders ($n = 116$)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consistency of the intended direction (CON)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrative approach to teaching and learning (INT)</td>
<td>0.73**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alignment between objectives, content and assessment (ALI)</td>
<td>0.69**</td>
<td>0.59**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School impact (SCI)</td>
<td>0.72**</td>
<td>0.72**</td>
<td>0.59**</td>
<td>0.59**</td>
</tr>
<tr>
<td>Mean</td>
<td>5.04</td>
<td>5.45</td>
<td>5.32</td>
<td>5.04</td>
</tr>
<tr>
<td>SD</td>
<td>0.99</td>
<td>0.88</td>
<td>0.73</td>
<td>1.04</td>
</tr>
<tr>
<td>Min.</td>
<td>1.33</td>
<td>1.75</td>
<td>3.29</td>
<td>1.00</td>
</tr>
<tr>
<td>Max.</td>
<td>6.83</td>
<td>7.00</td>
<td>6.71</td>
<td>7.00</td>
</tr>
</tbody>
</table>

| **District-level stakeholders ($n = 550$)** |       |       |       |       |
| Consistency of the intended direction (CON) |       |       |       |       |
| Integrative approach to teaching and learning (INT) | 0.61** |       |       |       |
| Alignment between objectives, content and assessment (ALI) | 0.69** | 0.66** |       |       |
| School impact (SCI) | 0.64** | 0.62** | 0.57** |       |
| Mean          | 4.34  | 5.23  | 4.87  | 4.76  |
| SD            | 1.00  | 0.86  | 0.80  | 0.96  |
| Min.          | 1.17  | 1.75  | 2.00  | 1.33  |
| Max.          | 6.83  | 7.00  | 7.00  | 7.00  |

**Note:** $***p < 0.01$
to identify unobserved subpopulations, i.e., latent classes of individuals based on their observed response patterns (Berlin et al., 2014). More specifically, LPA was used in this study to explore the variation in the educational stakeholders’ perceptions, and to examine whether the two participant cohorts differed in terms of their profile memberships.

The analyses were conducted using Mplus version 7.4 and MLR estimator, which produces maximum likelihood estimates with standard errors and $\chi^2$ test statistics that are robust to non-normality (Muthén and Muthén, 1998–2015). The observed mean scores for the three components of curriculum coherence, and for the school impact scale, were used as the indicators of the latent profiles. The indicator variables were allowed to correlate within classes. An exploratory approach to obtain the best statistically and conceptually suitable latent class solution was used (Berlin et al., 2014) and data were fitted to models estimating one through six classes (Table II). Akaike (AIC), Bayesian (BIC) and adjusted Bayesian (aBIC) information-based measures of fit, as well as Vuong–Lo–Mendell–Rubin (VLMR), Lo–Mendell–Rubin (aLRT) and bootstrapped (BLRT) likelihood ratio tests were used to determine the optimal number of classes (Berlin et al., 2014; Nylund et al., 2007). In addition, latent class probabilities and entropy statistics were used to examine the clarity of the different solutions. After identifying the most suitable latent profile solution, the three-step approach in Mplus (Asparouhov and Muthén, 2014) was used to investigate the differences between state- and district-level participants by adding the auxiliary variable, i.e., participant cohort, as a predictor of the latent class variable in logistic regression. The three-step approach considers the measurement error in the classification (Asparouhov and Muthén, 2014) and produces more reliable results than conducting comparisons using the most likely classifications as an observed variable.

Results

Latent profiles

Based on all fit indices and likelihood ratio tests, the two-class solution fit the data significantly better than the one-class model. According to the VLMR and aLRT likelihood ratio tests, the model fit did not significantly improve with the addition of any subsequent classes after the two-class model. The AIC and aBIC indices showed increasing fit with every additional class, whereas the BIC and the BLRT test showed the five-class model to fit the data best. However, the largest class, including 538–555 participants, remained relatively stable from two- to six-class solutions, and therefore the additional classes did not add substantive value. The two-class solution was thus considered the more parsimonious, and as the VLMR and aLRT likelihood ratio tests showed no further improvement in model fit with additional classes, the two-class model was chosen for further analysis. The entropy statistic of 0.76 in the two-class solution was considered adequate.

The profiles are shown in Figure 1. The first latent profile culled from the analysis was high coherence and impact. It was the most common profile among the participants in the entire data with an 83 percent share ($n = 555$). Participants in the high coherence and impact profile perceived the steering core curriculum document as coherent in terms of the three curriculum coherence components, and at the same time expected it to have a rather strong impact on school-level development.

The second latent profile lower consistency of intended direction and impact represented 17 percent of the participants ($n = 111$). The lower consistency of intended direction and impact profile holders showed less balanced perceptions of the core curriculum’s coherence, with the consistency of the intended direction perceived as less evident in the core curriculum than the integrative approach to teaching and learning, and alignment between objectives, content and assessment. This was combined with slightly lower perceptions of the curriculum reform’s impact on the school-level development work; however, the mean of the perceived school impact was still above the scale midpoint in this profile as well.
### Table II.
The results of the latent profile analysis with 1–6 classes.

<table>
<thead>
<tr>
<th>No. classes</th>
<th>LogL (nf)</th>
<th>AIC</th>
<th>BIC</th>
<th>aBIC</th>
<th>Entropy</th>
<th>Latent class probabilities</th>
<th>VLMR</th>
<th>aLRT</th>
<th>BLRT</th>
<th>Class counts¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-2,894.49 (14)</td>
<td>5,696.98</td>
<td>5,760.00</td>
<td>5,715.55</td>
<td>1.000</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>666</td>
</tr>
<tr>
<td>2</td>
<td>-2,884.54 (19)</td>
<td>5,674.07</td>
<td>5,732.60</td>
<td>5,672.27</td>
<td>0.76</td>
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Notes: LogL, log likelihood value; nf, number of free parameters; AIC, Akaike information criterion; BIC, Bayesian information criterion; aBIC, adjusted Bayesian information criterion; VLMR, Vuong–Lo–Mendell–Rubin likelihood ratio test; aLRT, Lo–Mendell–Rubin adjusted likelihood ratio test; BLRT, bootstrapped likelihood ratio test. The selected model is in italic; ¹class counts based on estimated posterior probabilities and classification of individuals based on their most likely latent class membership (in parenthesis)
The high coherence and impact profile holders perceived the consistency of the core curriculum’s intended direction to be higher (Wald $x^2(1) = 80.08, p < 0.00$) and the reform’s school impact stronger (Wald $x^2(1) = 5.04, p = 0.02$) compared to their counterparts in the lower consistency of intended direction and impact profile. The two profiles did not significantly differ from each other in terms of the perceived integrative approach to teaching and learning or alignment between objectives, content and assessment. Accordingly, both profile groups had shared and consensual perceptions of the two elements of curriculum coherence, i.e., an integrative approach to teaching and learning, and alignment between objectives, content and assessment. Hence, they had a similar understanding of the core curriculum’s guiding role in reforming the practical aspects of the school-level teaching and learning, and in terms of the core curriculum constituting an aligned and continuous whole. However, the profiles differed from each other in the extent to which the core curriculum was estimated to successfully provide a consistent direction, for instance in summing-up the most important goals for schools and clarifying the roles of teachers and schools. In addition, the profiles differed slightly regarding the reform’s perceived impact on school-level development, for instance in terms of how strongly the curriculum reform work supported the commitment to active development at the school level, and facilitated the solutions to school-level challenges.

**Differences between state- and district-level stakeholders**

The results of the logistic regression showed that the district-level stakeholders had 4.22 times greater odds of belonging to the lower consistency of intended direction and impact profile, compared to the state-level stakeholders ($b = 1.44, SE = 0.65, p = 0.03, OR = 4.22, 95\%CI = 1.18–15.10$). Conversely, the district-level stakeholders had 0.24 times the odds of belonging to the high coherence and impact profile relative to the state-level stakeholders ($b = -1.44, SE = 0.65, p = 0.03, OR = 0.24, 95\%CI = 0.07–0.85$). Hence, the state-level stakeholders displayed higher odds of falling into the high coherence and impact profile, and lower odds regarding the lower consistency of intended direction and impact profile relative to their district-level counterparts. Accordingly, the state-level stakeholders, responsible for constructing the core curriculum, were relatively more likely to perceive the
intended direction of the core curriculum as more consistent, and to evaluate the school-level impact more positively, than the district-level stakeholders. In contrast, the district-level stakeholders were relatively more likely to perceive the intended direction of the core curriculum as less consistent, and to evaluate the school impact as lower, compared to the state-level stakeholders. At the same time, both state- and district-level stakeholders estimated the curriculum coherence in terms of the integrative approach to teaching and learning, and alignment within the core curriculum, to be rather high. Moreover, it is important to note that the majority of participants in both cohorts belonged to the high coherence and impact profile. Still, the results imply that the state- and district-level stakeholders had some differences in their perceptions of both the consistency of the core curriculum’s intended direction and the school impact of the curriculum reform.

Methodological reflection
The study was conducted in the context of the Finnish national curriculum reform and the participants were individuals invited to the curriculum reform work. Thus, they may have been more development oriented, open, or active, and hence could have had more positive perceptions about the reform than their peers who were not involved in the development work to the same extent. Further, engagement in the development work was likely to provide more opportunities for sense-making and building more coherent views about the curriculum document. Accordingly, they might have adopted more coherent perceptions of the reformed curriculum than on average. However, the participants in both the state- and district-level curriculum development working groups included a large percentage of teachers, school leaders and other school staff, some of whom had no previous experience in curriculum development work. Therefore, the sample represented a variety of roles in the educational system.

For the curriculum coherence and school impact scales, the metric and partial scalar measurement invariance across the two participant cohorts was supported. The few non-invariant intercepts might imply that some of the measurement items systematically evoked different response levels in the two participant cohorts (Cheung and Rensvold, 2002). In this study, the metric and partial scalar invariance was seen as providing a sufficient basis for the further analysis using observed mean scores. However, further validation of the scales with different samples is needed (also see Sullanmaa et al., submitted). Moreover, the scales have not previously been validated in other countries or languages.

The selection of the latent profile solution was based on the likelihood ratio tests, fit indices and model parsimony. While the two-class solution was chosen, other fit indices in the LPA showed that the five-class solution would also have fit the data. With a larger sample, the smaller profiles could have been separated more clearly and might have provided additional information about the variation in the perceptions of the stakeholders.

Discussion
This study utilized a person-centered approach in exploring profiles of perceived curriculum coherence and school impact in the context of a national core curriculum reform in Finland. It also examined whether there were differences in profile memberships between the state- and district-level stakeholders involved in the curriculum reform. The results showed that 83 percent of the participants belonged to the high coherence and impact profile and 17 percent to the lower consistency of intended direction and impact profile. In addition, the differences between the state- and district-level stakeholders’ odds of belonging to a certain profile were identified. The results showed that the state-level stakeholders had relatively higher odds of falling into the high coherence and impact profile, whereas the district-level stakeholders had relatively higher odds of belonging to the lower consistency of intended direction and impact profile. Earlier research has also shown that stakeholders and
practitioners at different levels as groups often hold different views about educational change (Desimone, 2006; Ng, 2009; Timperley and Parr, 2005; Yuen et al., 2012).

The Finnish core curriculum is a central steering document for local school development, and its coherence influences the understanding of the shared object of the school development work at different levels of the educational system. The understanding of curriculum coherence was similar among the state- and district-level stakeholders in terms of the core curriculum’s ability to provide an integrative approach to teaching and learning, and having alignment and continuity within the curriculum. This implies that the new core curriculum was perceived as effective in encouraging the use of integrative and activating teaching methods and aligning the content, teaching methods and assessment with the objectives. The agreement among the state- and district-level stakeholders on these core issues provides an important resource for further curriculum development work and implementation by establishing a common ground for the development work in the form of shared understanding.

However, the perceptions of the core curriculum providing a consistent direction for the schools’ and teachers’ work, and the reform work affecting the school-level development, varied among the state- and district-level stakeholders, with district-level stakeholders being more likely to perceive these aspects as less successful. A reason for this might be that the district-level stakeholders perceived the broader direction and intended effects on school-level development as less optimally explicated and clarified than the more practical aspect of the integrative approach to teaching and learning and alignment. On the other hand, the consistency of the intended direction as a component of curriculum coherence involves a broader, more abstract perspective on school development, for instance regarding how the curriculum supports the roles of schools and teachers in addition to facilitating the teaching of essential material. This may require the district-level stakeholders to process more fundamental, long-term objectives for the change, which might also require developing new competencies. The consistency of the curriculum’s intended direction and the expected impact of the reform on the school-level development become operationalized and tested in the district-level curriculum work, where local conditions and school-level practice need to be considered and may sometimes collide with the reform aims (see McLaughlin, 1998; Spillane et al., 2002).

Moreover, the state-level stakeholders’ role in the reform process involved constructing the core curriculum. These stakeholders may therefore have acquired a broader perspective on the development work and greater experience of coherence through their role and activities in the working groups, and consequently may have viewed the core curriculum’s intended direction and school-level effects of the reform more positively. A previous qualitative study has also shown that the Finnish state-level school administrators had a rather shared understanding of the reform’s goals (Salonen-Hakomäki et al., 2016). The district-level stakeholders’ role, on the other hand, was to develop the local curriculum based on the general framework set by the reformed core curriculum. Accordingly, they played a different role and engaged in different activities in the curriculum development, making sense of the new core curriculum by comparing it with existing policies, analyzing the changes that needed to be implemented, and transforming the principles of the core curriculum into activities at the school level (Soini et al., 2018).

Overall, the results showed that most of the participants at both the state and district level perceived the core curriculum as a rather coherent steering document and expected it to have a positive impact at the level of school development, for instance increasing teachers’ commitment to the development work. Agreement about curriculum coherence and effects at the level of school development may further facilitate the curriculum implementation by supporting the local ownership of and commitment to the development work (see Cheung and Wong, 2011; Fullan, 2007; Ng, 2009). In turn, discrepancy or
contradictions in the interpretations among the stakeholders at different levels of the educational system may hinder the school-level implementation (Spillane et al., 2002; Porter et al., 2015). The results imply that more clarity, interaction, collaboration and shared coherence-making in the state- and district-level curriculum development work is needed in order to construct even more widely shared understandings, especially about the broader aspects of the intended direction of the core curriculum and the reform's effects on the school-level development work. This calls for shared sense-making between and within the state and district levels: negotiating the meaning of the curriculum for school development, its direction and its implications for teaching and learning. In addition to focusing on the coherence within the curriculum's content and elements, curriculum development work should pay more attention to promoting both individual and shared sense-making in the professional communities, focusing on building coherent understandings of the direction of the curriculum. Moreover, a clear and shared understanding about the potential effects and benefits of the reform work at schools should be one of the focal areas of the development work. However, further research is needed to investigate how much perceived coherence and agreement across levels of the educational system is necessary for the reform to have a positive impact on school-level development.

This study examined state- and district-level stakeholders’ perceptions of the reformed Finnish core curriculum as a steering document guiding local school development, and the reform's expected impact on school-level development work. Although the difference between state- and district-level stakeholders’ perceptions of curriculum coherence was expected, recent large-scale studies on the perceptions of different-level stakeholders focusing on perceived curriculum coherence are scarce. More research is needed to explore the socio-cultural determinants of coherence-making, for instance, the extent to which the coherence experienced differs in different contexts and whether similar or different patterns of perceived curriculum coherence and school impact can be found in other curriculum reform contexts.

It should be noted that at the time of the data collection, the implementation of the new curricula had not yet begun. Hence, the success and effectiveness of the new core curriculum will be further evident in the perceptions and understandings of teachers, in the changes in teaching and learning and in the sustainability of the change within the educational system. Further research is needed to gain a better understanding of how perceived curriculum coherence throughout the educational system contributes to curriculum reform implementation and coherence in school practice, for instance by examining teachers' perceptions of curriculum coherence as they develop and transform the curriculum at the school and classroom levels. Moreover, it would be useful to explore whether particular features of the Finnish curriculum reform process are related to the educational stakeholders’ perceptions of curriculum coherence.

This study contributes to the literature on curriculum reform by shedding light on the perceptions of curriculum coherence and school impact of those involved in a large-scale national curriculum reform process; providing an understanding of the similarities and differences between the perceptions of state- and district-level stakeholders; utilizing a person-centered approach to examine variation in the stakeholders’ perceptions; and suggesting that coherence-making within and between the levels of an educational system is important for facilitating successful curriculum reform.

Note
1. The municipalities were sampled on the basis of national statistics gathered by Statistics Finland (2013).
References


**Appendix. The scales and items for curriculum coherence and school impact**

**Scales**

**Curriculum coherence**

**Consistency of the intended direction** *(In) the national core curriculum […]*

Con11: clarifies the entity of a teacher’s job

Con12: supports the teaching of the essential material in various subjects

Con13: delimits the duty of the school in a sensible manner

Con14: is clear and well organized

Con15: successfully sums up the most important goals for the operation of the school

Con16: constitutes an aligned foundation for the local curricular work

**Integrative approach to teaching and learning** *(In) the national core curriculum […]*

Int21: encourages teachers to use activating and engaging teaching methods
Int22: encourages teachers to use assessment methods that support learning
Int23: supports the harmonization of teaching
Int24: the general section creates something new

Alignment between objectives, content and assessments
(In) the national core curriculum [...] 
Ali31: the goals are in line with the assessment criteria
Ali32: a subject constitutes an integral continuum
Ali33: the goals are in line with contents
Ali34: takes a pupil’s age range into consideration
Ali35: descriptions of teaching methods in various subjects are in harmony with the general goals
Ali36: constitutes an integral whole
Ali37: the goals of the general section are also well in evidence in the subject section

School impact
The work to reform the curriculum [...] 
Sci1: maintains active development work at schools
Sci2: commits teachers to working on developing the school
Sci3: helps the school community identify the core tasks
Sci4: directs development work to resolve problems observed in the daily life of the school
Sci5: helps people develop solutions that work at the local level for organizing teaching
Sci6: promotes the resolution of many problems related to basic education at the local level

*Translated from Finnish.

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The change-ready leadership of technology-savvy superintendents

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Jayson W. Richardson
Department of Educational Leadership Studies, University of Kentucky, Lexington, Kentucky, USA

Abstract
Purpose – The purpose of this paper is to help the researchers sought to take a closer look at the technology challenges facing district superintendents in today’s leadership climate.
Design/methodology/approach – The authors chose semi-structured interviews as the data collection method. Through 45 min, one-on-one, semi-structured telephone interviews, the researchers were able to collect data about overcoming the challenges of being a modern technology-savvy superintendent.
Findings – Through the analysis, the authors identified four themes related to the challenges faced by these district leaders, including meeting the needs of stakeholders, supporting professional development, fostering mindset changes and addressing a fear of the unknown.
Research limitations/implications – This study only relied on interviews and did not examine evidence from the field, such as site visits or artifact examination.
Practical implications – This study provides the field with insights into the role of the change-ready district leaders who foster lasting technology-infused transformation.
Social implications – While challenges for any district leader wishing to make lasting change exist, there are district leaders today who embody second-order change leadership when overcoming the challenge of school technology leadership. These technology-savvy superintendents play an important role as whole-system change agents.
Originality/value – This study highlighted that there many district leaders today who embody second-order change leadership in helping move their districts forward.
Keywords Administration, Superintendent, Technology leadership, District leadership

Technology-driven innovations present new challenges for leading modern school districts. Today’s superintendents are uniquely positioned to leverage their role in ways that can dramatically impact the success of staff and students. These leaders serve as “learning engineers” who seek to solve problems that are facing students, teachers and building principals. These learning leaders consider existing research and formulate more effective and efficient ways to promote and support teaching and learning across their unique districts (Hess and Saxberg, 2014). Thus, district leaders are charged with enabling their organizations, and the people within, to anticipate and respond to unique challenges and varied opportunities that are ever-evolving in a learning community (Sanford, 2017).

One such challenge faced by district superintendents is keeping up with technological innovations. Research has shown that superintendents who adapt their roles to embrace technological shifts face dire challenges such as financial barriers, infrastructure upgrades and addressing stakeholders’ fears regarding change (Sauers et al., 2014). Shifts in the formal learning climates of P-12 schools intersect with what some scholars call a “fourth industrial revolution” in which greater automation, connectivity and increased productivity present new and different learning opportunities (Sheninger and Murray, 2017, p. 14). Wagner and Dintersmith (2015) observed that in recent years, society and education have
been changed through the internet, going from a period of “knowledge scarcity” (p. 27) where schools and libraries housed information to an era of “innovation and opportunity” (p. 26) where knowledge is a free commodity.

The superintendent’s role is influenced by rapid technological advancements. The role thus demands strong digital leadership from superintendents who can foster a strong vision regarding technology initiatives that align resources, increase academic rigor, sustain ongoing professional development and support learning communities (Consortium for School Networking, 2014). Hence, the modern P-12 superintendent must be a digital innovator by the changing nature of both the educational and the technological landscape.

Through this study, the researchers sought to take a closer look at the technology challenges facing district superintendents in the USA considering today’s leadership climate. Building on earlier research that examined the first decade of award-winning technology-savvy superintendents in the USA (2000–2010) (see Sauers et al., 2014) and further augmenting our comparative study of shifts in district technology leadership from 2001 to 2014 (Richardson and Sterrett, 2018), this study takes a closer look at 14 recipients of the eSchoolNews Tech-Savvy Superintendent Award from the years 2011 to 2014. These superintendents are recognized as innovative, forward-thinking digital leaders in their district. This study focuses on the challenges facing technology-savvy superintendents today.

Literature review
A following review of the literature provides context into the role of district leadership, trends in school technology leadership and innovation, and resultant shifts during an innovation era. Building professional capacity in districts and schools to meet the ever-changing needs of students and teachers is also discussed.

Role of school district leaders in the USA
Today’s superintendents have progressed through teacher, principal and graduate-level credentialing largely absent of any formal school technology leadership training (McLeod et al., 2015). For example, in recent years the graduate courses perceived to have the highest levels of importance to educational leaders were school law, school finance, school community relations and human resource management. The most valued professional development opportunities were law/legal issues, finance, personnel management, school reform/improvement, superintendent–board relations and school–community relations (Kowalski et al., 2011).

Likewise, the Professional Standards for Educational Leaders (National Policy Board for Educational Administration, 2015) explicitly notes the importance of “effective use of technology in teaching and learning” (p. 12) as well as fostering “continuous improvement of individual and collective instructional capacity to achieve outcomes” (p. 14). The standards also state that a core skill is the ability to “envision those future challenges and opportunities so educational leaders can succeed in the future” (p. 3). Additionally, the International Society for Technology in Education (2019) Standards for Education Leaders note that school leaders should “create a culture where teachers and learners are empowered to use technology in innovative ways to enrich teaching and learning” (para. 3), “build teams and systems to implement, sustain, and continually improve the use of technology to support learning” (para. 4) and “model and promote continuous professional learning for themselves and others” (para. 5). Although these practices are found in various sets of standards, and to a lesser extent in the literature, they require a shift in thinking, an upgrade of skill sets and a refinement of dispositions.

The research of Waters and Marzano (2007) indicates that student achievement significantly relates to district leadership practices of: setting goals; focusing on achievement
and instruction; ensuring board alignment with and support of district goals; monitoring progress on goals for achievement and instruction; and using resources to support the goals for achievement and instruction. From supporting goals to aligning resources, it is evident that the district leader provides key support for teaching and learning (Honig, 2012). Nevertheless, technological advances have impacted the way school districts operate in areas of infrastructure, resource allocation, stakeholder relations and instruction. These shifts demand a level of digital leadership from superintendents that was not evident decades ago (Sheninger, 2014).

Technology, innovation and leadership
Technology-driven changes have had a ripple effect on school leadership within a relatively short period. For example, from 2010 to 2015, the percentage of children in the USA in households with a handheld smart mobile device rose from 25 to 89 percent (National Center for Education Statistics, 2016a). From 2011 to 2015, the percent of children in the USA using the internet rose from 62 percent in 2011 to 86 percent in 2015 (National Center for Education Statistics, 2016b). Survey data reveal that as of 2016, 69 percent of the US P-12 school districts offer online course options and over one-fifth (21 percent) of districts have high-schools with bring-your-own-device programs in place (Schaffhauser, 2016). These technological realities and resultant shifts prompted the researchers to examine recently acclaimed superintendents to address the research question as follows:

RQ1. What are the challenges of being a technology-savvy superintendent today?

Nevertheless, there is little empirical research on school technology leaders. McLeod and Richardson (2011) noted that there is “a dearth of technology leadership coverage” (p. 216), which aligns with the “glaring lack of in-depth research” regarding technology leadership (Richardson et al., 2012, p. 131). This finding was also noted by Richardson et al. (2012) who sought to understand how technology leadership standards were addressed in the literature base. Furthermore, Dexter et al. (2016) found limited empirical research related to the intersection of technology and district or school leadership, particularly in the area of organizational leadership and professional capacity.

Research indicates that school leaders must plan, monitor and support technology efforts. Planning and training have found to be predictors of teachers’ classroom technology use (Tondeur et al., 2010). Creating a shared understanding of technology integration is a key role of school and district leaders (Vanderlinde et al., 2012). Nevertheless, much of the research that exists focuses on the technology-savvy school principal rather than the superintendent (see, e.g. Schrum and Levin, 2013; Polizzi, 2011).

However, research focused on superintendents who are technology savvy has begun to emerge particularly with regards to advice for other district leaders (McLeod et al., 2015), challenges faced by these individuals (Sauers et al., 2014) and dispositions of these technology-savvy superintendents (Richardson et al., 2015). Additionally, McLeod et al. (2015) found that successful technology-savvy superintendents focus on budgeting, professional development, as well as instructional leadership. These innovative leaders also affirmed the value of modeling technology usage while at the same time recognized the value of risk-taking. Further, Sauers et al. (2014) noted that technology-savvy superintendents set a shared vision, prioritized infrastructure development, viewed communication as a vital element of their job and emphasized the importance of quality, ongoing professional development. In another study, Richardson et al. (2015) highlighted the importance of collaboration, expectation setting, risk-taking, personal engagement in technology and having a vision for technology integration. Nevertheless, researchers have concluded that the “field of educational leadership still has a long way to go concerning meeting district-level leaders’ technology-related needs” (McLeod et al., 2015, p. 17).
As evidenced above, the body of research on the nexus of school technology leadership and the district superintendent is limited but developing, albeit slowly. The field is also shifting quickly as technology innovations better align to instructional improvements specifically and district needs generally. Thus, a better and modern understanding of the challenges of current technology-savvy district leaders is helpful for the development of the field generally, and district leadership improvement specifically.

**Conceptual framework**

This study on the challenges of digital district leadership is conceptually grounded in first- and second-order changes as detailed by Marzano *et al.* (2005). First-order change is described as incremental or small clear steps that an organization might take. In contrast, second-order change involves a dramatic or more profound change in which the system is fundamentally changed (Marzano *et al.*, 2005). In second-order change, leaders set a vision for the district and continually reinforces it through action in a consistent and sustained manner. We offer that district-level digital leadership must be framed in a long-lasting, systemic, second-order change that fosters a more profound impact on leading, teaching and learning through collaboration.

The notion of second-order change aligns with the work of technology-savvy school leaders. For example, Militello *et al.* (2011) suggested that for technology adoption to be effective, it must be “integrated organically” (p. 143) and in a manner that is differentiated based on context rather than on, for example, a wholesale purchase-and-install approach for a whole school. Second-order change often requires time. Marzano *et al.* (2005) further explained that the leader must be willing “to live through a period of frustration and even anger from some staff members” (p. 75) which is perhaps one reason by more superintendents do not invest the needed time, energy and passion for sustaining the work over time. District leadership is vital in supporting individual principals in second-order change, which, in turn, can influence student achievement (Waters and Marzano, 2007). Thus, our conceptual framework centers on leading, learning, teaching and collaboration through the lens of second-order change.

**Methods**

We sought to understand the second-order change leadership of today’s technology-savvy superintendents. The current study is designed as a replication study and was built on a previous research effort that examined the perspectives of 2000–2010 eSchoolNews Tech-Savvy Superintendent awardees (McLeod *et al.*, 2015; Richardson *et al.*, 2015; Sauers *et al.*, 2014). Kugler *et al.* (2006) noted that replication studies could be useful to the body of research when the current context supports its continuing relevance and when it can support the original study either by extending or clarifying the generalizability from the original study. This current study additionally expands on a recent comparative analysis (Richardson and Sterrett, 2018) by exclusively focusing on how current district leaders articulate and overcome challenges.

**Context**

To better understand the challenges of technology-savvy district leadership, we used a semi-structured interview protocol with superintendents who were recognized as award winners from 2011 to 2014. The eSchoolNews publication has recognized recipients of the Tech-Savvy Superintendent Award since 2000. Awardees have been from districts in the USA ranging from small to large and from rural to suburban. Typically, eight to ten superintendents are recognized each year. According to eSchoolNews (2014), these superintendents were
nominated by peers and bestowed the honor of the award and were judged according to the following criteria:

1. must be a general superintendent;
2. models the effective use of technology in the day-to-day execution of the superintendency;
3. ensures that technology resources are equitably distributed among students and staff;
4. insists that technology resources are equitably distributed among students and staff;
5. demonstrates exceptional vision in leading the development and implementation of a district-wide technology plan;
6. exhibits a thorough understanding of the role of technology in education and can articulate that understanding to all school district stakeholders;
7. provides exceptional leadership in supporting the integration of technology into the curriculum;
8. demonstrates exceptional vision in employing technology to streamline school district business operations;
9. demonstrates curiosity and open-mindedness in considering emerging technologies and weighing non-traditional solutions to traditional problems; and
10. thinks creatively and strategically about the long-term challenges and opportunities of technology in the school district and in education at large (eSchoolNews, 2014).

The district leaders who met each criterion outlined above provided the specific context for this study as we seek to understand better current digital district leadership challenges and opportunities faced in an evolving learning climate.

Population
From 2011 to 2014, 37 superintendents were recognized as tech-savvy superintendents by eSchoolNews. We attempted to locate every awardee using e-mail addresses found on district websites and social networks such as Twitter and Facebook. We found contact information for 32 awardees. We reached out to each of the 32 superintendents on three different occasions in the spring of 2016 via e-mail or via social media. In total, 14 superintendents agreed to participate in the study, yielding a participation rate of 44 percent of award winners with publicly available contact details. While this was perhaps a relatively lower response rate than hoped for, it was noticeably higher than the 19 percent response rate in the first study of technology-savvy superintendents from 2001 to 2011 (Sauers et al., 2014).

As detailed in Table I, the ages of the participants ranged from 35 to 68. The years of experience in the field of education ranged from 15 to 47 years. Four females and ten male superintendents participated in the study. The size of school districts ranged from a small rural district of just over 400 students to a large urban district of well over 100,000 students. Since these award-winning superintendents are nationally recognized and thus known, each consented to have their names and stories publicly shared in subsequent published work.

Data collection
To gain a deeper understanding of these district leaders’ challenges, we chose semi-structured interviews as the data collection method. We conducted the interviews in the spring of 2016. We used interviews to better understand the participants’ unique perspectives in their respective context (Kvale, 1996) as well as to understand better the technology-savvy superintendents’ in-depth thoughts, unique perspectives and experiences...
<table>
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<th>Name</th>
<th>Gender</th>
<th>Age</th>
<th>Exp.</th>
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<tr>
<td>2012</td>
<td>Dan Frazier</td>
<td>Male</td>
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<td>36</td>
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Notes: Table modified from Richardson and Sterrett (2018). *Data for enrollment retrieved from Institute of Education Sciences in the Common Core of Data (www.nces.ed.gov)
(Check and Schutt, 2012) related to leadership and innovation. Through 45 min, one-on-one, semi-structured telephone interviews, the researchers were able to collect data about overcoming the challenges of being a modern technology-savvy superintendent. The interview protocol was developed as part of the previous study (see Sauers et al., 2014) and addressed topics of experience, technology initiatives, challenges, overcoming those challenges, professional development, use of technology and empowering stakeholders.

Data analysis
In this study, we began the analysis by looking at the codebook from the Sauers et al.’s (2014) study. Each researcher started with those codes and then used inductive coding of one transcript each to refine and update the codebook. Once we agreed on the updated codebook, each researcher coded half of the transcripts. The transcripts were analyzed separately by each researcher in order to identify and refine key concepts as a part of the “iterative process” (Check and Schutt, 2012, p. 304). We coded using the constant comparative method as detailed by Lincoln and Guba (1986) and Patton (2002). The coding was then compared and analyzed jointly to identify areas of agreement and disagreement across all transcripts (see Creswell, 2014) until 100 percent agreement was reached. Themes described in results below were selected based on whether at least half of the participants discussed that theme.

Results
Findings from this replication study provide insights into district-wide second-order change leadership with regards to technology integration. Through our analysis, we identified four themes related to the challenges faced by these district leaders. As detailed in Table II, these themes included meeting the needs of stakeholders \( (n = 9) \), supporting professional development \( (n = 9) \), fostering mindset changes \( (n = 8) \) and addressing the fear of the unknown \( (n = 8) \).

Meeting needs of stakeholders
The technology-savvy award-winning superintendents in the study understood the importance of relating to stakeholders to understand and meet their needs. For example, Michele detailed how it is essential to work with the school board to communicate “why we

<table>
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</table>

Note: X indicates theme identified
were investing in technology [and] what the gains are for our students and their families.” Todd similarly empowered his district leadership team to go “to our community” to discuss why the technology initiative was vital to student learning. Connecting with stakeholders allowed these leaders to shape the conversation and highlight the learning potential of these digital initiatives.

These superintendents also realized the importance of stakeholders who worked within the schools. For example, David noted that busy teachers often feel pressured to adopt new initiatives. As such, he noted that “it’s hard because the biggest struggle is that there are so many things that are landing on teachers’ plates today” adding that teachers feel that the “target is always moving.” Hence, these technology-savvy superintendents noted how empathy was necessary to sustain change brought on by digital initiatives.

Understanding and meeting the needs of students was an essential element for these innovative superintendents who were concerned with implementing lasting organizational changes. For example, Dallas noted that he learned much about the schools’ needs simply by spending time with students in the lunchroom and during extracurricular events. In his interview, he discussed that he learned a lot about student needs by merely getting to know them. He emphasized the importance of “actually sitting down and having conversations with them.”

Parents are additional stakeholders who need to be supported through a technology initiative. For example, Randy observed that concerned parents would say “you’re giving my kid a device, how is it being filtered? What are you going to do to protect them from the cyber-criminal world?” He added that training and communication helped familiarize parents with the technology and allowed them to adjust to the affordances of these new technologies. By being proactive, Randy was allowed to address parental concerns in a timely, regular fashion that lowered stress and reduced confusion of various stakeholders.

Ensuring that all stakeholders feel supported is essential to sustain buy-in. As such, the superintendents in this study focused on stakeholders across the spectrum. Board members, teachers, students and parents each have unique needs and concerns. Time and time again, we heard that understanding those needs and meeting the stakeholders on their terms was essential to navigating this challenge.

**Professional development**

Nine of the participants noted that professional development allowed their district to make the most of teachable moments. For example, Jim realized the importance of supporting principals when he discussed how he and his central office staff worked to ensure that principals were regularly engaged in professional training and that principals were involved in the same professional development efforts as their teachers. Jim discussed how developing technology-savvy principals enabled his schools to be on the cutting edge.

Karen noted that her district was continually hiring new teachers. As a result, many of these new teachers were not equipped with digital and concomitant instructional skills. In response, her district offered a professional development conference each summer. Many of her staff members led sessions on how to teach with new digital tools. Additionally, Karen noted how some of her veteran teachers still needed help in this regard. In a fast-growth district like Karen’s, “keeping everyone up-to-date and feeling confident about what they can do” was of utmost importance. Thus, a focus on honing technology skills across the degrees of comfort and levels of experience was noted to be useful for many of these leaders.

Dan cautioned against merely acquiring technology devices without creating a robust professional development plan. He emphasized that teachers’ comfort level with technology influences student success. He saw the professional development that the district provided to teachers as the “lynchpin” to ensure that technology was a means to enhance learning and was not just a tool. Likewise, Brad described that his staff professional development efforts focused on building “classrooms around the use of technology as a fundamental resource” in
a way that "expands what is possible in the classroom tenfold." Hence, leveraging technology for learning, and not just a tool, required deliberate professional development planning from these superintendents.

C.J. noted that professional development could be challenging as "the best-made plans can go awry." As such, C.J. ensured that instructional coaches were there to work side by side with teachers and principals during professional development sessions. C.J. also discussed how professional development should be well planned and should be individualized. This belief speaks to the second-order change of maintaining flexibility and focusing on sustainability rather than adopting one-size fits all approach.

Through the interviews, it also became evident that for technology-savvy superintendents to engage in second-order change, they should foster their professional learning network. These professional learning networks provide a natural, relevant, just-in-time platform to foster ongoing learning and development of themselves. For example, David explained how "Twitter was probably my best professional development. Even today, it's a great professional development tool for me because I connect with so many different leaders from all over the country and the world." Likewise, Dallas explained that he often participated in a digital consortium that allows superintendents to hone ways to communicate more deeply with the community. His participation in this group helped improve his capacity to be a technology-savvy leader. Thus, superintendents can better learn how to engage their local community by participating in their extended learning community.

Changing mindsets
Overcoming resistant mindsets was a challenge faced by many of these district leaders. As such, eight of the award winners specifically noted this topic when discussing school technology innovation. Michele spoke of "opening the door for (children) to utilize technology" while being mindful of safety policies and restrictions. When it came to using applications such as YouTube for teaching and learning, she mentioned that leaders often face resistance from concerned parents. Michele had to work to overcome the mindset of parents that "students are going to do things that are inappropriate," to instead focus on teaching students how to use technology appropriately and constructively. She explained that "if you make technology a sin, if you create the mindset that this has to be a battle with the students and not teach them the appropriate use of technology, then we won't win the war." Winning the "war" of appropriate use of digital technologies required that these district leaders actively work to change the mindset that only the worst will come from the use of modern digital technologies. This work includes a focus on changing the mindsets of both parents and students.

The superintendents in this study also discussed how overcoming mindsets could be professionally risky. Dan discussed how "this is a tough time to be a superintendent" when the average tenure is "about 2.5 years." The nature of the position means that these individuals accept a given level of pressure as well as stress. Pressure and stress increase when implementing a new change initiative. For example, Dan noted that in the USA, most school board members are elected citizens and are not necessarily trained educators. Thus, school board members may not be aware of the educational affordances of digital technologies. Dan added, "technology-savvy superintendents recognize the power of technology to increase instructional quality." These types of leaders "tend to be a little more aggressive, a little more risk-taking, and willing to try new things." The data from these interviews indicate that implementing a new digital initiative requires that a superintendent shift stakeholder mindset toward change and uncertainty. Accepting this as the norm can help alleviate internal pressure and hopefully lower that stress.

Luvelle explained how technology-savvy superintendents think about change initiatives from various vantage points rather than from a one-size fits all perspective. When implementing
a district-wide technology initiative, Luvelle discussed that superintendents need to stay attuned to the reality that technology initiatives are going to look different for different schools. Doing so often depends on the comfort level and pedagogical beliefs of the school principals. For example, one school might want to “flip” instruction which requires students to have technology access at home. Another school may want to use iPads in the classroom to enhance instruction. Luvelle explained that honoring the principals’ specific vision for teaching and learning and then gradually expanding the principal’s comfort level was integral to realizing a lasting, second-order change. These superintendents thus leveraged their leadership by proactively affirming the unique needs of each school.

Fear of the unknown
Participants in this study noted how enacting second-order change is not predictable, safe, nor incremental. Eight of our superintendents discussed how it can cause a sense of fear for many school leaders. For example, George explained that there “are people my age who still struggle with the basic uses of technology” even though those same individuals are the ones making key instructional decisions. George said despite knowing technology can be engaging for students and teachers, “it scares us. I think that’s a big part of what’s going on.” Likewise, Theresa added “there are always people, especially staff and parents, who are skeptical and fearful of innovation” which often manifests itself as fear of failure. As such, Theresa continued, that it takes time to “create that environment where we encourage failure.”

Jerri added that to overcome a fear of the unknown, you have to be a risk taker. She explained that “you are going to fall. You’re going to experience some pain along the way. But if you have that vision of ‘I’m going to do it for the right reasons,’ it will propel you forward.” She added that taking risks is “the right thing for kids. You are moving them forward, preparing them better for their future. You just really have to be willing to step out and take some risks. I think that that’s the difference.”

Luvelle observed that there would be difficulties that occur from equipment failures to community perceptions. He noted that “when you’re recognized as a tech leader, you are going to put yourself out there, that’s part of the risk.” Since unknown challenges will arise, being willing and ready to confront them is important. The slogan “No Fear” was Michele’s mantra as a technology-savvy superintendent. She went on to explain that “what I mean by that is you have to be a calculated strategic risk taker. You don’t go with the status-quo. You’re constantly asking, ‘Why not?’” A majority of the superintendents in this study were willing to take risks themselves as well as empower principals and teachers to similarly break new ground in leading, teaching and learning.

Discussion
The findings from this study on superintendents overcoming challenges of technology innovation provide the field with insights into the role of the change-ready district leaders who foster lasting technology-infused innovations. Through our analysis of interviews with 14 technology-savvy superintendents, we found evidence of various aspects of second-order change in P-12 school districts. These leaders know their respective communities and they empathize with their needs. This knowledge situates these superintendents to foster change effectively and efficiently. Moreover, these superintendents are prepared to lead outside their comfort zones. This responsible risk-taking allows them the opportunity to be a second-order change agent in an era of educational innovation.

Change-ready district leaders know their learning community
Technology-savvy superintendents combine on-the-ground visibility with an online presence. They are present in cafeterias and engage on social media like Twitter in weekly chats.
The relational component of their job was thus essential. These superintendents understood the needs of their principals, teachers, students and parents. As Dickson (2014) noted, superintendents are positioned to foster conditions that support and sustain the work at the school level, and thus they can affect change within the schools and within the district as an organization. Second-order change-ready superintendents realize the importance of carving out time and creating structures to learn from each other. They help build networks across the district where principals work together to exchange information and strategies, collaborate of relevant issues, learn from each other and engage in “formally organized collaborative professional development meetings” (Moolenaar and Sleegers, 2015, p. 12). For example, Todd explained that “we like to provide opportunities for classroom teachers to learn from other classroom teachers about how they’re using technology to enhance learning” and emphasizes common planning time in schools along with a monthly district professional learning day to broaden a shared understanding from within the learning community.

Superintendents play a critical role in supporting and facilitating professional development that fosters second-order change. Envisioning and empowering distributed leadership is an integral component of leadership that can foster success in students and positively impacts teaching and learning (Good et al., 2016). The literature shows us that superintendents create working structures for principals to support teachers’ professional development, collaboration and continued growth which can in turn support the work of innovation over time (Wells et al., 2010). In our study, Jerri pointed out the importance for the district leader to “build an enthusiasm” by encouraging professional development. Additionally, Luvelle placed instructional coaches in schools and classrooms to co-facilitate lessons and introduced new technology tools. Moreover, Michele noted the importance of having principals work together, learn from other principals and “take a critical look at their leadership practices” in a reflective manner.

Being both knowledgeable about technology as well as fostering knowledge among staff and the broader school community requires consistent action by these leaders. Succeeding in the innovation era requires strengthening the entire learning organization, while still focusing on one’s own continued growth. McLeod et al. (2015) observed that superintendents need to be able to create and support innovative learning environments rather than simply showcase new tools. Their continued reflection and knowledge of their unique learning communities is a key. District leadership can effectively prepare stakeholders to navigate change decisions (Decman et al., 2018). As Jim noted above, empowering the principals to lead through innovation then leads to a transformative change in the schools.

Hollingworth (2012) studied the importance of school and district leadership in supporting teachers’ professional development and noted that their presence and engagement in the professional development was significant as “professional learning communities could not exist without administrative support of innovation and change: specifically, time to meet, money to support new curriculum, and training” (p. 377). Jerri remarked that “the thing that gets in the way the most is adult discomfort. Many adults are very uncomfortable with technology, so they want to push it aside,” yet preparing kids to succeed in the innovation area requires educators “to be willing to learn and to model that learning.”

Second-order change-ready district leaders take risks

Today’s school districts should expect their leaders to be digital vanguards. Districts stakeholders need to realize that this role requires a level of risk-taking. The current study highlighted exemplary superintendents who have made long-lasting change in an era of innovation by taking risks. They tweet, they blog, they conference and they often take the path less traveled. They work tirelessly to “win the war,” as Michelle observed, to help the school community see technology as a leverage point and not as a “sin.” Innovation is a “dynamic social process” (Gilad-Hai and Somech, 2016, p. 35) that can empower teachers and
strengthen district collaboration. Risk-taking by school leaders affords students opportunities to thrive in a “world of innovation and opportunity” (Wagner and Dintersmith, 2015, p. 26). The innovative superintendents in the current study leveraged digital leadership to meet the changing demands of a student population that is increasingly adept at navigating technology such as a plethora of apps on handheld learning devices.

Most of the participants in this study noted the importance of being willing to step outside of their comfort zone. To make decisions that are not obvious or easy takes vision, follow-through and engagement with the greater school community. Luvelle observed that “when you’re recognized as a tech leader, you are going to put yourself out there, and that’s part of the risk. You will be a target. You’re going to need to have that tough skin, grit, and perseverance to move through it.” District leaders, who have been trained to manage communication practices carefully, take risks when they leverage social media which is often a tool that enables others to see in-the-moment glimpses of leadership in action.

Many of the participants in this current study are active on Twitter, which allows for the second-order leaders to be an optimizer of innovations by sharing knowledge among stakeholders (Marzano et al., 2005). Twitter can be used to highlight successes within the district, share examples of student learning and showcase the accomplishments of extracurricular teams. Tweets can link to school web pages or superintendent blogs to share out information. Cox and McLeod (2014) encouraged superintendents who are not yet comfortable with Twitter to perhaps “lurk and learn” (p. 864) and observe how others use Twitter. Additionally, using Twitter can help flatten the hierarchical, formal structures between district leaders and school leaders (Wang et al., 2016). David observed, “We’re not afraid to use the technology and not afraid to model it. I’m on Twitter. My students follow me. I’m using multiple devices when I’m working with teachers and with students.” Nevertheless, engaging in a wider community on platforms such as Twitter is a risky act.

This flattening allows superintendents to authentically learn from their communities. Technology-savvy superintendents learn from each other through their professional learning networks despite otherwise being disconnected. For example, Dan noted that technology-savvy superintendents are “self-taught, collaborating on forums like Twitter” and referred us to the #suptchat monthly chat where superintendents share ideas. As Dallas noted, “I’ve worked with principals to set up school Twitter accounts or school Facebook pages so that they can figure out how to communicate with their community appropriately. They see that the superintendent is not afraid to try something, so I’m empowering them to do that work as well too.”

In addition to Twitter, Shenniger and Murray (2017) suggested that district superintendents consider adopting the following technology tools: blogging (e.g. Blogger or WordPress); digital photo sharing (e.g. Instagram or Snapchat); video platforms (e.g. Ustream or YouTube Live); or Facebook. From our study, Brad explained that he contributes “his best thinking” to his blog. Likewise, a number of the superintendents in this study noted that they maintain blogs and Facebook pages as well. These technological outlets can help leaders monitor their impact and serve as examples of second-order changes in the district. By engaging in a professional learning network, these superintendents remained on the cutting edge of innovation by going outside their comfort levels with technology.

Limitations and future research
This study has three main limitations. First, when nominating the superintendents for the award, nominators were encouraged to describe how the candidate met the hallmarks noted earlier in this paper. The nominator provided examples to eSchoolNews of exactly how the superintendent espoused those hallmarks. However, this does not guarantee that these superintendents consistently met all ten hallmarks of excellence; only that they supported a technology innovation that likely impacted teaching and learning while living up to those
hailmarks at some point in time. Future research might engage these types of innovative leaders in a longitudinal study to better understand the lived experiences of these second-order change leaders and the resultant impacts on the schools.

The second limitation is the population. The participants in this study are not representative of the greater population of superintendents in the USA. Indeed, they are possible anomalies. Instead, the subpopulation (i.e. award-winning technology savvy superintendents) serve as examples of some superintendents who are effectively engaging in technology-savvy leadership. A future study might focus on superintendents from specific demographics (e.g. inner city, urban, magnet, parochial and international) to better understand situational challenges and experiences with digital leadership.

Third and moreover, the research focused on superintendents’ perspective as leaders and did not seek to include other stakeholders’ perspectives (such as students, teachers or parents) to ensure the reliability of their responses. Additionally, this study only relied on interviews and did not examine evidence from the field, such as site visits or artifact examination. We also did not incorporate other data points, such as student achievement scores, teacher attrition rates, teacher working conditions survey or other such aspects, which thus limits the scope of the study to superintendent perceptions. Taking a holistic approach to district-wide school technology leadership and triangulating the experiences of various stakeholders is a need for a future study.

Conclusion

Technology has changed learning, teaching, leading and collaborating. While challenges for any district leader wishing to make long-lasting change exist, there are district leaders today who embody second-order change leadership when overcoming the challenge of school technology leadership. These technology-savvy superintendents play an important role as whole-system change agents. Through their work on the ground and in their professional learning network, they display empathy and understanding of the unique needs of their community. Moreover, they can be change-ready leaders through their willingness to embrace the unknown and take risks.

The themes that emerged from this study, including meeting the needs of stakeholders, supporting professional development, fostering mindset changes and addressing the fear of the unknown, were somewhat different from the previous study of 2001–2010 superintendents; suggesting shifts over the last decade. The four themes that emerged then were shared vision, infrastructure, communication and professional development (Sauers et al., 2014). Shifting from a focus on ensuring a robust infrastructure in the prior decade to now fostering a mindset change in the more recent years, suggests a focus on sustained, integrated leadership, which speaks to second-order change. While both studies spoke to the professional development aspects therein, this more recent study clearly supported the notion of overcoming fear of the unknown and fostering mindset changes, which also speaks what Marzano et al. (2005) refer to as a collective efficacy, or the “group members’ shared perception or belief that they can dramatically enhance the effectiveness of an organization” (p. 99).

Second-order change leadership is imperative to ensure that a district technology implementation goes beyond the purchase and acquisition stage. As Marzano et al. (2005) explained, leaders must be knowledgeable about the impact of innovation on teaching and learning, must be the driving force behind the innovation, must challenge the status-quo and must continually monitor the impact of the innovation. The challenges remain for any district leader wishing to make long-lasting change. This study highlighted that there are district leaders today who embody second-order change leadership as they tap into the affordances of digital technologies to improve learning, teaching and leading. We are hopeful that there are many more.
References


**Further reading**


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Principal support of student psychological needs and a functional instructional core

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University of Oklahoma, Norman, Oklahoma, USA, and  
Jentre J. Olsen  
Oklahoma State University, Stillwater, Oklahoma, USA

Abstract

Purpose – Limited attention to messages transmitted between principals and teachers led to the general question for this study: is principal support of student psychological needs related to functional social conditions within the instructional core? Therefore, the purpose of this paper is to define principal support of student psychological needs and explain its leadership function through the lens of conversation theory. Without much empirical evidence to draw from, a theoretical argument for how principal support of student psychological needs might influence the features of the teaching and learning environment is advanced then tested empirically.

Design/methodology/approach – Hypotheses were tested using a non-experimental, correlational research design based on ex-post facto data collected from teachers and students in 93 schools in a metropolitan city of the USA. Data were collected in the spring of 2017 from randomly sampled teachers and students in the 93 schools. Usable responses were received from 1,168 teachers, yielding a response rate of 66 percent. A total of 4,523 students received surveys and usable responses were received from 3,301, yielding a response rate of 73 percent. Multi-level modeling was used to analyze the data.

Findings – Principal support of student psychological needs was related to school-level differences in faculty trust in students, collective teacher efficacy and student perceived autonomy support. Leadership practices surrounding professional development and instructional coherence had moderately strong, positive relationships with the outcome variables; however, the strength of these relationships diminished when principal support was included in the analysis.

Originality/value – The argument in this study proposes that principal–teacher conversations enhance leadership practices and support a vibrant and engaging instructional core when intentional messages build mental representations that enable teachers to understand sources of optimal student growth. Such use of conversation extends the functionality of principal–teacher interactions beyond that of teacher control and toward an ongoing sense-making and learning process.

Keywords Leadership conversation, Principal support, Conversation theory, Teacher trust in students, Collective teacher efficacy

Paper type Research paper

Relationships have always been fundamental to principal work and a focal element of effective leadership. As school leadership moves toward distributed and collaborative practices (Hallinger, 2011; Harris, 2011; Spillane, 2012), messages transmitted through relationships seemingly take on greater significance for research and practice. Research, though, has not adequately peeled back the relational layers involved in social exchanges to explain how messages embedded within interactions shape teaching and learning environments.

Principal support of student psychological needs makes a modest turn in this direction. Prior research established the construct and demonstrated its association with student learning capacity, teacher–student trust and student self-regulated learning (Adams and Olsen, 2017). This study extends earlier work by situating the practice in the context of conversation theory and considering its influence on features of the instructional core relative to formal organizational structures. The general question guiding the inquiry was: is principal support of student psychological needs related to a functional instructional core?
Principal support of student psychological needs derives from self-determination theory and its explanation for how factors in the social environment at times contribute to, or at other times inhibit, human motivation, flourishing and adaptive functioning (Ryan and Deci, 2002). As explained, our innate, basic psychological needs of autonomy, competence and relatedness fuel autonomous motivation, healthy adaptation, optimal development and overall wellbeing (Deci and Ryan, 2016). Activation of these needs in students is linked to better achievement, interest in academic work, meaningful engagement and academic accomplishments (Neimic and Ryan, 2009a, b; Reeve, 2002).

Principals reach student psychological needs primarily through teachers and other school members whose daily interactions with students can either be facilitative of, indifferent to, or determinantal to self-determined action (Deci et al., 1994; Jang et al., 2010; Reeve and Jang, 2006). Given the indirect path between principals and students, the purpose of need-supportive conversation is to stimulate sense-making and learning by talking intentionally with teachers about social, psychological and cognitive processes contributing to student development (Adams and Olsen, 2017). Importantly, principal support of student psychological needs does not involve telling teachers how to teach or controlling their practices; instead, it functions as an external reference to encourage teachers to think about the social and psychological factors behind student engagement in the learning process.

Principal–teacher interactions oriented toward autonomy support stress the importance of de-emphasizing evaluating and controlling practices while emphasizing the relevance and meaningfulness of learning tasks, affording voice and choice in activities, and framing goals that have intrinsic value and purpose (Assor et al., 2002; Niemiec and Ryan, 2009a, b). Teacher understanding about autonomy support can emerge from conversations in which principals ask teachers how they make course content relevant to students, how they make class personally exciting for students and how they try to motivate students (Adams and Olsen, 2017). Questions addressing the above practices intend to elicit reflection and thoughts about the controlling and nurturing qualities behind instructional practices.

Interactions targeted at competence support address the ways teachers communicate high expectations for students, how they use performance information and feedback in non-controlling ways and how they build student confidence with optimally challenging tasks (Reeve and Halusic, 2009). Teacher understanding of competence support can form as principals engage teachers in thinking about how they convey realistic and high expectations for students, how they build confidence of discouraged students and how performance information is used (Adams and Olsen, 2017). Such interactions direct sense-making to how goals are framed and used, how feedback supports learning and how interactions affect student mindsets (Reeve, 2016).

Relational-supportive interactions stimulate reflection on the social adjustment of students, the expression of respect and acceptance, open communication and outreach to parents/guardians (Deci and Ryan, 2016). Example conversations might involve principals asking teachers how they convey acceptance and respect to students, how they support students’ social adjustment or how teachers communicate and work with parents and students. Talking about teaching and learning from a social perspective directs attention to affective processes and their influence on student motivation.

The above questions asked regularly and consistently provoke exchanges that enable teachers and principals to think deeply, and collectively, about student psychological needs and need-support in the classroom. The questions do not explicitly reference student autonomy, competence or relatedness, yet the information exchanged captures experiences related to psychological needs and need-support. Such questions leverage conversation as a vehicle for teacher reflection and sense-making around the interaction between the learning context and the student as a learner.
The argument for how principal support of student psychological needs operates as a leadership practice derives from conversation theory. Conversation theory views human interactions, those occurring in-person as well through social media, as a process of becoming informed and constructing actionable knowledge on a specific phenomenon (Scott, 2001). Interactions conducive to learning undergo a social-cognitive process that Pask (1975) refers to as conversation between conversation. As seen in Figure 1, at the social level, conversations need to be contextually situated and flow from a common referent, such as a definition, conceptual framework, assumptions, etc. Once received, information travels a cognitive path whereby messages encoded in language are decoded and processed through existing mental representations. The cognitive conversation occurs when neurological signals triggered from social exchanges interact with established mental representations of phenomena (Boyd, 2004; Pask, 1976; Scott, 2001).

Applied to school leaders, conversation theory implies that tacit assumptions and mental models behind teacher practices may be sensitive to the content exchanged between principals and teachers. For those in leadership roles, talk functions as more than a control mechanism as Gronn (1983) argued. With sense-making as the objective, words become a powerful psychological source of human learning when organized by a shared framework and processed against mental structures (Boyd, 2004). Not every leadership interaction will be, nor should be, structured around sense-making, but when leadership calls for building the capacity of teachers and school organizations to do things better, learning becomes a central aim of principal–teacher conversation.

Rationale and hypotheses
Not covered in the above definition and description of principal support of student psychological needs was reasoning for its relationship with characteristics of a high functioning instructional core. For this study, we define a functional instructional core as one with strong faculty trust in students, collective teacher efficacy and need-supportive instructional styles. These three social conditions are generally associated with higher performing schools that have achieved equitable achievement distributions (Deci and Ryan, 2016; Forsyth et al., 2011; Goddard et al., 2001).

As illustrated in Figure 2, school principals largely leverage formal and informal organizational arrangements in their effort to define an instructional core in which teachers and students engaged harmoniously in productive and generative learning (Penuel et al., 2010). Formal structures aim to establish clarity, predictability and consistency in a social space increasingly marked by task complexities and dynamic interactions (Forsyth et al., 2011). For instance, professional development opportunities can connect teachers to
information and experiences aligned with a shared school vision. An aligned curriculum and instructional program tighten consistency and coherence across classrooms. Teacher evaluation models align what teachers teach and how they deliver learning to established standards and expectations.

Informal structures reflect another pathway by which principals organize learning. These organizational mechanisms work through social-psychological processes to align teaching and learning with common goals and aspirations (Forsyth and Adams, 2014). Principal support of student psychological needs operates within the informal, social-psychological space surrounding teachers (Adams and Olsen, 2017). Socially, principal–teacher interactions facilitate information exchange about students, their motivation and their optimal performance; psychologically, repeated interactions experienced as meaningful and useful can have positive motivational and cognitive consequences (Adams and Olsen, 2017). As argued next, there is reason to believe that principal–teacher interactions framed around student psychological needs have a stronger relationship to faculty trust in students, collective teacher efficacy and need-supportive instructional styles than structural mechanisms of professional development, instructional program coherence and teacher evaluation.

Principal support of student psychological needs and faculty trust in students
Faculty trust in students reflects a shared teacher perception that students can be counted on to take personal responsibility for academic work (Forsyth et al., 2011). Trust builds when teachers experience students as consistently exhibiting benevolence, competence, openness, reliability and honesty in how they engage academic activities, how they interact with teachers and how they treat their school peers (Adams, 2008). School principals find themselves in a somewhat precarious position to influence teacher trust discernments. Principals are not a direct party in the teacher–student relationship, meaning any influence they have travels through teachers and results in classroom relational dynamics that either give rise to trust or impede trust perceptions from forming.

Principals can turn to formal structures like professional development, aligning curriculum and instructional programs and teacher evaluation to coordinate learning experiences (Penuel et al., 2010). Although these organizing processes are common to schools, they lack the precision, specificity and consistency to shape social-cognitive processes behind teacher discernments of student dispositions, attitudes and performance (Forsyth et al., 2011). A more likely avenue for principals involves cognitive processes from which teacher judgments form (Forsyth et al., 2011).

As implied by conversation theory, ongoing interactions about the sources of student motivation can affect the cognitive lens used to explain and understand student behavior
Intentional conversation about psychological needs, and support for these needs, transmits information that has consequences for teacher discernment of student behaviors and intentions (Adams and Olsen, 2017). If unwanted attitudes and habits are processed through a need-support framework, actions normally judged to be intentional violations of trust can be recast as behaviors attributed to diminished autonomy, competence or relatedness. In such instances, reasons for underperformance come into focus, allowing teachers alternative explanations for unproductive attitudes and habits. For this reason, the following hypothesis is advanced:

**H1.** Teacher perceived principal support of student psychological needs has a stronger relationship to faculty trust in students than professional development, instructional program coherence and teacher evaluation.

**Principal support of student psychological needs and collective teacher efficacy**
Collective efficacy represents a faculty’s belief in its collective ability to perform teaching tasks that engage students in meaningful learning (Goddard et al., 2000). Efficacy beliefs vary by degree based on past successful experiences, vicarious learning, supportive social environments and positive affective states (Adams and Forsyth, 2006).

School principals play an influential role in shaping the degree to which a teaching faculty feels confident in its ability to deliver on its promise of a high-quality learning experience (Calik et al., 2012; Demir, 2008). A clear vision, enabling structures, instructional supports and past accomplishments form a climate where teachers believe they can be successful (Adams and Forsyth, 2006). In such places, the formal organizational arrangements support good teaching by eliminating or reducing structural tensions arising from incoherence, mission drift or disorganization.

Principal support of student psychological needs works through the social organization to reach efficacy discernments. Just as a well-organized school provides an ideal context for teaching, interactions framed around psychological needs enables teachers to look at challenging circumstances as opportunities for growth, not as insurmountable obstacles or professional deficiencies. Socially, principal–teacher interactions establish a connection for efficacy-producing information to travel. Cognitively, need-support forms a mental representation to understand student performance as a function of controllable social conditions. Such a mental schema interprets teaching challenges as manageable opportunities. For this reason, the following hypothesis is advanced:

**H2.** Teacher perceived principal support of student psychological needs has a stronger relationship to collective teacher efficacy than professional development, instructional program coherence and teacher evaluation.

**Principal support of student psychological needs and need-supportive instruction**
Need-supportive instruction optimizes student learning through a social context that stimulates the interest, curiosity and growth-oriented tendencies inherent in all individuals (Reeve and Jang, 2006). Instructional practices compatible with such a context seek to draw out students’ natural proclivity for learning by energizing the innate needs of autonomy, competence and relatedness (Reeve et al., 2004). Need-supportive practices cover numerous facets of classroom life – formal structures and expectations, communication and interaction patterns, use of assessments and performance information, goal framing, discipline and learning tasks and processes (Jang et al., 2010).

Principals can lead schools toward a need-supportive instructional climate by creating a formal and informal organization that nurtures teacher psychological needs (Pelletier and Sharp, 2009) and persuades teachers to change their motivational beliefs about students
Conversation has the potential to achieve the latter outcome when messages deliver information that enables teachers to learn, formally and informally, about need-supportive strategies (Pelletier and Sharp, 2008). Principal support of student psychological needs assists teachers in this process by stimulating collective thinking about social and psychological factors involved in learning (Adams and Olsen, 2017). With this in mind, the following hypothesis is advanced:

**H3.** Teacher perceived principal support of student psychological needs has a stronger relationship to a need-supportive instructional climate than professional development, instructional program coherence and teacher evaluation.

**Methods**

Hypotheses were tested using a non-experimental, correlational research design based on **ex-post facto** data collected from teachers and students in 93 schools in a metropolitan city of the USA. Schools in this sample served approximately 56,200 students with 38.5 percent identifying as white, 31 percent as Hispanic, 21 percent as African–American, 4.5 percent as Asian/Pacific Islander and 5.5 percent Native American. Additionally, 77 percent of the students qualified for the federal lunch subsidy, 18 percent were English language learners, and 14 percent had individualized education plans.

Data were collected in spring of 2017 from randomly sampled teachers and students in 93 schools. Teacher surveys were distributed electronically directly to teachers’ district e-mail address. A total of 1,772 surveys were e-mailed. Usable responses were received from 1,168 teachers, yielding a response rate of 66 percent. Student data were collected from randomly sampled students in either the 5th, 6th, 7th, 8th, 9th, or 11th grades. Paper and pencil surveys were administered by teachers during the school day. A total of 4,523 students received surveys and usable responses were received from 3,301, yielding a response rate of 73 percent.

**Measures**

The principal support of student psychological needs scale (Adams and Olsen, 2017) is a teacher report measure that asks teachers to report on the frequency in which they talk about issues related to student psychological needs with their principal. The nine-item scale uses a six-point Likert response set ranging from 1 never to 6 very often. Sample items include: “My principal consults with me about the social adjustment of individual students.” “My principal wants to know how I make my class personally exciting to learners.” “My principal wants to know what steps I take to motivate those learners who appear disengaged.” The scale has good psychometrics with items converging on one factor with individual item loadings ranging from 0.80 to 0.95 and strong reliability as reported by a Cronbach’s α of 0.98 (Adams and Olsen, 2017).

Leadership practices used for comparison purposes were measured with established surveys used in previous research. The Professional Development Opportunities Scale (Rowen et al., 2009) measured teacher perceptions of formal and informal professional learning. Instructional program coherence was measured with the program coherence scale developed by the Chicago Consortium (Newman et al., 2001). Teacher evaluation was measured with a scale developed by Henneman and Milanowski (2003) to assess teacher perceived utility of the evaluation process (see Table AI for psychometrics based on data from this sample).

Measures used to account for conditions in the instructional core came from established instruments. Five items from the Omnibus Trust Scale (Forsyth et al., 2011; Tschannen-Moran, 2004, 2014a, b) were used to measure faculty trust in students. Collective teacher efficacy was measured with seven items from Goddard et al.’s (2000) collective efficacy scale. Need-supportive
instruction was measured with the Autonomy Enhancement Scale (Assor et al., 2002) (see Table A1 for psychometrics based on data from this sample).

Teacher control variables included in the analytical models included years taught, years in current school, Nationally Board Certified (NBC) and gender. These teacher variables account for experiences that have the potential to shape teacher orientations toward their teaching colleagues, students and instructional styles (Lustick and Sykes, 2006; Park and Oliver, 2008; Tschanne-Moran, 2007). School social composition was measured by the percent of students in a school qualifying for the federal Free and Reduced Lunch (FRL), the percent of schools identifying as non-Caucasian and average prior math achievement on state curricular exams. Multiple studies report that these school characteristics have strong effects on trust, collective efficacy and instructional styles (Adams, 2008; Adams and Forsyth, 2013; Goddard et al., 2000; Goddard et al., 2001; Goddard et al., 2009). No data on student characteristics were obtained.

Analytical technique
Hypotheses were tested in HLM 7.0 with restricted maximum likelihood estimation. First, variance in dependent variables were decomposed with an unconditional random effects ANOVA. Next, school-level variance was explained with a random effects ANCOVA model (Raudenbush and Bryk, 2002). A stepwise approach was used for the random effects ANCOVA. Teacher level covariates, school-level covariates and leadership practices were entered in Step 1. Principal support of student psychological needs was added in Step 2. Teacher variables were grand-mean centered and fixed to the school level. School-level variables were also grand-mean centered. Sample equations follow.

Unconditional random effects ANOVA:

\[
\text{Level 1: } \text{FTS}_{ij} = \beta_0 + r_{ij},
\]

\[
\text{Level 2: } \beta_0 = \gamma_{00} + u_{0j}.
\]

Random intercepts ANCOVA:

\[
\text{Level 1: } \text{FTS}_{ij} = \beta_0 + \beta_1(\text{NBC}) + \beta_2(\text{Female}) + \beta_3(\text{Years Teaching}) + \beta_4(\text{Years School}) + r_{ij},
\]

\[
\text{Level 2: } \beta_0 = \gamma_{00} + \gamma_{01}(\text{ZFR}) + \gamma_{02}(\text{ZnCauc}) + \gamma_{03}(\text{PLO}) + \gamma_{04}(\text{TE}) + \gamma_{05}(\text{IPC}) + \gamma_{06}(\text{ZPSSPN}) + u_{0j},
\]

\[
\beta_{1j} = \gamma_{10} + u_{1j},
\]

\[
\beta_{2j} = \gamma_{20} + u_{2j},
\]

\[
\beta_{3j} = \gamma_{30} + u_{3j},
\]

\[
\beta_{4j} = \gamma_{40} + u_{4j}.
\]

Limitations
Like all research, the design of the empirical test had limitations that require identification. First, the absence of experimental conditions subject hypotheses to rival explanations.
For instance, by using surveys to measure principal support of student psychological needs, we could not control the frequency in which principals engaged teachers in conversations, in what contexts conversations were held and the explicitness of talking about autonomy, competence and/or relatedness. Second, we argued that principal support of student psychological needs works through teacher mental representations to affect conditions in the instructional core. The study did not actually measure cognitive structures of teachers. Third, the sample, while large, reflects a population of city schools and may not represent conditions common in suburban and rural schools. Fourth, teacher data come from the same survey, introducing potential common measurement bias.

**Findings**

Descriptive statistics are presented in Tables I and II. Table I reports means and standard deviations for teacher data and the student measured need-support variable. As reported, nearly 83 percent of the teachers identified as female, 8 percent were NBC, the average time in their current schools was about 6 years and average teaching experience was about 12 years. Teacher level means were 4.57 for collective efficacy and 4.05 for faculty trust in student. Average need-support as reported by students was 2.90. Skewness and kurtosis estimates for individual level outcome data fall within the acceptable ranges to satisfy the normality assumption (Warner, 2008).

Descriptive data for school-level variables include means, standard deviations and bi-variate correlations for school characteristics and leadership practices. Average school FRL rate and

<table>
<thead>
<tr>
<th>Teacher and student variables</th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurt</th>
<th>NBC</th>
<th>Female</th>
<th>YS</th>
<th>YT</th>
<th>CTE</th>
<th>FTS</th>
</tr>
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<tbody>
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<td>0.28</td>
<td>1.0</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00</td>
<td>0.00</td>
<td>0.02</td>
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<tr>
<td>Female</td>
<td>0.83</td>
<td>0.37</td>
<td>1.0</td>
<td>0.12*</td>
<td>0.16*</td>
<td>0.08*</td>
<td>0.08*</td>
<td>0.02</td>
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<tr>
<td>Years in school</td>
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<td>6.23</td>
<td>1.83</td>
<td>3.07</td>
<td>1.0</td>
<td>0.58*</td>
<td>0.08*</td>
<td>0.07*</td>
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<tr>
<td>Years teaching</td>
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<td>9.04</td>
<td>0.49</td>
<td>−0.93</td>
<td>1.0</td>
<td>0.09**</td>
<td>0.07*</td>
<td>0.02</td>
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<td>CTE</td>
<td>4.57</td>
<td>0.97</td>
<td>−0.62</td>
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<td>0.07*</td>
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<td>FTS</td>
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<td>0.57*</td>
<td>0.07*</td>
<td>0.02</td>
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<tr>
<td>Need-support</td>
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<td>−0.18</td>
<td>1.0</td>
<td>0.57*</td>
<td>0.07*</td>
<td>0.02</td>
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</tbody>
</table>

Table I.
Descriptive evidence for teacher- and student-level variables

Notes: n = 1,038 teachers. n = 3,301 students. YS, years in school; TY, years teaching; CTE, collective teacher efficacy; FTS, faculty trust in students; NBC, nationally board certified. NBC and female are nominal variables so skewness and kurtosis were not reported. Need-support is a student variable and was not included in the bi-variate correlations with teacher variables. *p < 0.05; **p < 0.01

<table>
<thead>
<tr>
<th>School-level variables</th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurt</th>
<th>FRL rate</th>
<th>NC</th>
<th>MA</th>
<th>PSSPN</th>
<th>PLO</th>
<th>IPC</th>
<th>TE</th>
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<td>FRL rate</td>
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<td>−0.75</td>
<td>−0.54</td>
<td>1.0</td>
<td>0.24**</td>
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<td>0.12</td>
<td>0.12</td>
<td>−0.13</td>
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<tr>
<td>% non-Caucasian</td>
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<td>0.19</td>
<td>0.46</td>
<td>−1.0</td>
<td>1.0</td>
<td>−0.03</td>
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<td>0.13</td>
<td>0.12</td>
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<td>Prior math</td>
<td>678.54</td>
<td>46.32</td>
<td>0.32</td>
<td>−0.08</td>
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<td>0.02</td>
<td>0.37**</td>
<td>0.21*</td>
<td>0.04</td>
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<td>PSSPN</td>
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<td>0.59</td>
<td>−0.78</td>
<td>0.41</td>
<td>1.0</td>
<td>0.65**</td>
<td>0.57**</td>
<td>0.06</td>
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<td>PLO</td>
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<td>0.44</td>
<td>−0.50</td>
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<td>0.65**</td>
<td>0.57**</td>
<td>0.06</td>
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<tr>
<td>IPC</td>
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<td>0.55</td>
<td>0.28</td>
<td>−0.21</td>
<td>1.0</td>
<td>0.44**</td>
<td>0.10</td>
<td>1.0</td>
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</tr>
<tr>
<td>TE</td>
<td>3.97</td>
<td>0.51</td>
<td>−0.34</td>
<td>−0.29</td>
<td>1.0</td>
<td>0.44**</td>
<td>0.10</td>
<td>1.0</td>
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</table>

Table II.
Descriptive evidence on school-level variables

Notes: n = 93 schools. NC, percent of the student population identifying as non-Caucasian; MA, prior math achievement; PSSPN, principal support of student psychological needs; PLO, professional learning opportunity; IPC, instructional program coherence; TE, teacher evaluation. *p < 0.05; **p < 0.01
average non-Caucasian student representation were 70 percent, average prior school math achievement on state curricular exams was 678 (slightly below the proficiency cut-score of 700). School means for leadership practices ranged from a low of 3.97 for teacher evaluation to a high of 4.67 for professional development. Skewness and kurtosis for school-level predictor variables fall within the acceptable range to satisfy the normality assumption (Warner, 2008).

Bi-variate correlations indicate strong and statistically significant associations among the leadership practices, including principal support of student psychological needs. With these estimates, tolerance and variance inflation factors were examined to assess the degree of collinearity among the independent variables. The degree of collinearity was within acceptable ranges with variance inflation factors below 5.0 and tolerance statistics about 0.2 (Menard, 1995; Neter et al., 1989). The highest variance inflation (4.2) and lowest tolerance (0.24) was with professional learning and principal support of student psychological needs.

Results of the unconditional ANOVAs showed that each operationalized condition of the instructional core had statistically significant variance attributed to school differences. School-level variance for faculty trust in students was 26 percent ($\chi^2 = 409.42, p < 0.01$), 16 percent ($\chi^2 = 273.11, p < 0.01$) for collective teacher efficacy and 15 percent ($\chi^2 = 692.34, p < 0.01$) for need-supportive instruction. These values are comparable with existing literature. Goddard et al. (2001) estimated school-level variance in faculty trust in students and parents to be around 30 percent in an urban district, and Goddard and Skrka (2006) estimated that 17 percent of variance in collective teacher efficacy was attributed to school differences in a sample of urban elementary schools. This is the first study that we are aware of that has partitioned variance in need-supportive instruction to schools.

Table III presents evidence on explained variance in faculty trust in students. Results are presented in a stepwise sequence with control variables combined with professional learning opportunities, instructional program Coherence and teacher evaluation in Model 1. Model 1 findings indicate that leadership behaviors directed toward professional development, teacher evaluation and instructional coherence had statistically significant relationships with faculty trust in students. Of these practices, professional learning opportunities ($\gamma_{04} = 0.26, p < 0.01$)

<table>
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<th>Fixed effects</th>
<th>Faculty trust in students Model 1</th>
<th>Faculty trust in students Model 2</th>
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<td>0.05 (0.10)</td>
</tr>
<tr>
<td>Female</td>
<td>0.02 (0.08)</td>
<td>0.02 (0.08)</td>
</tr>
<tr>
<td>Years teaching</td>
<td>-0.04 (0.03)*</td>
<td>-0.05 (0.03)</td>
</tr>
<tr>
<td>Years in school</td>
<td>0.07 (0.03)*</td>
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<td><strong>School predictors</strong></td>
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<tr>
<td>FRL rate</td>
<td>0.03 (0.06)</td>
<td>0.01 (0.05)</td>
</tr>
<tr>
<td>% non-Caucasian</td>
<td>-0.14 (0.05)**</td>
<td>-0.17 (0.05)**</td>
</tr>
<tr>
<td>Prior math</td>
<td>0.19 (0.05)**</td>
<td>0.17 (0.05)**</td>
</tr>
<tr>
<td>PLO</td>
<td>0.26 (0.06)**</td>
<td>0.08 (0.09)</td>
</tr>
<tr>
<td>TE</td>
<td>-0.14 (0.07)*</td>
<td>-0.12 (0.07)*</td>
</tr>
<tr>
<td>IPC</td>
<td>0.18 (0.06)**</td>
<td>0.14 (0.06)*</td>
</tr>
<tr>
<td>PSSPN</td>
<td>-</td>
<td>0.25 (0.09)*</td>
</tr>
<tr>
<td>Deviance (-2 log likelihood)</td>
<td>2599</td>
<td>2597</td>
</tr>
<tr>
<td>$\Delta$Deviance</td>
<td>-215**</td>
<td>-2</td>
</tr>
<tr>
<td>Explained school variance (%)</td>
<td>58</td>
<td>69</td>
</tr>
</tbody>
</table>

Notes: n = 93 schools; n = 1,038 teachers. PSSPN, principal support of student psychological needs; PLO, professional learning opportunity; IPC, instructional program coherence; TE, teacher evaluation. Teacher variables were grand-mean centered and held constant across schools. All variables were standardized to a mean of 0 and standard deviation of 1 to allow. Standard errors are reported in the parentheses. *p < 0.05; **p < 0.01.
had the strongest unique effect, accounting for about 7 percent of between-school variance in teacher trust beliefs. Interestingly, teacher evaluation ($\gamma_{05} = -0.14, p < 0.05$) had a negative relationship with trust, indicating higher favorable perceptions of the evaluation process were associated with lower trust. Model one accounted for approximately 58 percent of the between-school variance in faculty trust in students.

The inclusion of principal support of student psychological needs in Model 2 reveals intriguing patterns in the relationships between leadership practices and faculty trust in students. Related to the hypothesis, principal need-support had a statistically significant and small-to-medium-sized effect on faculty trust ($\gamma_{07} = 0.25, p < 0.01$). Further, it had the strongest unique relationship with trust, explaining approximately 6 percent of the school variance. Instructional program coherence and teacher evaluation maintained their statistically significant effects in Model 2 with only a slight reduction in the parameter estimates. In contrast, the relationship between professional learning opportunities and trust attenuated considerably, dropping from a statistically significant 0.26 to a non-statistically significant 0.08. Model 2 explained approximately 69 percent of the school-level variance in faculty trust in students, an increase of 11 percent from Model 1. This amount of explained variance is similar to the 69 percent of school-level variability Goddard et al. (2001) accounted for with school demographics.

Results of the analysis of collective teacher efficacy are found in Table IV. Data patterns closely align with those for faculty trust in students. In Model 1, professional learning opportunities ($\gamma_{04} = 0.31, p < 0.01$) had the largest unique effect on collective teacher efficacy, explaining approximately 9 percent of the school variance. The relationship between instructional program coherence ($\gamma_{05} = 0.20, p < 0.01$) and collective efficacy was also statistically different from zero with a moderate effect size. Principal support of student psychological needs in Model 2 had the strongest unique effect on collective teacher efficacy ($\gamma_{07} = 0.24, p < 0.01$), explaining about 6 percent of the school variance. Considerable attenuation also occurred with professional learning opportunities, the parameter estimate changed from a statistically significant 0.31 to a non-statistically significant 0.13.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Collective teacher efficacy Model 1</th>
<th>Collective teacher efficacy Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teacher predictors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBC</td>
<td>$-0.04 (0.11)$</td>
<td>$-0.04 (0.10)$</td>
</tr>
<tr>
<td>Female</td>
<td>$-0.01 (0.08)$</td>
<td>$-0.02 (0.08)$</td>
</tr>
<tr>
<td>Years teaching</td>
<td>$0.07 (0.03)^a$</td>
<td>$0.07 (0.04)$</td>
</tr>
<tr>
<td>Years in school</td>
<td>$0.01 (0.03)$</td>
<td>$0.02 (0.04)$</td>
</tr>
<tr>
<td><strong>School predictors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRL rate</td>
<td>$0.01 (0.04)$</td>
<td>$-0.00 (0.04)$</td>
</tr>
<tr>
<td>% non-Caucasian</td>
<td>$-0.04 (0.05)$</td>
<td>$-0.06 (0.04)$</td>
</tr>
<tr>
<td>Prior math</td>
<td>$0.08 (0.04)$</td>
<td>$0.06 (0.04)$</td>
</tr>
<tr>
<td>PLO</td>
<td>$0.31 (0.06)^{**}$</td>
<td>$0.13 (0.08)$</td>
</tr>
<tr>
<td>TE</td>
<td>$-0.07 (0.05)$</td>
<td>$-0.06 (0.05)$</td>
</tr>
<tr>
<td>IPC</td>
<td>$0.20 (0.05)^{**}$</td>
<td>$0.17 (0.05)^{**}$</td>
</tr>
<tr>
<td>PSSPN</td>
<td>$-0.24 (0.08)^{**}$</td>
<td></td>
</tr>
<tr>
<td>Deviance (-2 log likelihood)</td>
<td>2,667</td>
<td>2,664</td>
</tr>
<tr>
<td>ΔDeviance</td>
<td>$-155^{**}$</td>
<td>$-3$</td>
</tr>
<tr>
<td>Explained school variance (%)</td>
<td>75</td>
<td>81</td>
</tr>
</tbody>
</table>

**Table IV.** Results of the random intercepts ANCOVA for collective teacher efficacy

**Notes:** $n = 93$ schools; $n = 1,038$ teachers. PSSPN, principal support of student psychological needs; PLO, professional learning opportunity; IPC, instructional program coherence; TE, teacher evaluation. Teacher variables were grand-mean centered and held constant across schools. All variables were standardized to a mean of 0 and standard deviation of 1 to allow. Standard errors are reported in the parentheses. $^a p < 0.05; ^{**} p < 0.01$
Model 1 accounted for about 75 percent of the between-school variance in collective teacher efficacy. Explained school variance increased by 6 to 81 percent in Model 2. The large explained school-level variance is intriguing when considering that Goddard and Skrla (2006) explained 46 percent of variance in collective teacher efficacy by school demographics alone and Demir (2008) explained 58 percent by leadership factors. It makes sense that school demographics and leadership practices would combine to account for more variability in collective teacher efficacy.

Results for student perceived need-support are reported in Table V. The findings differ somewhat from those for faculty trust in students and collective teacher efficacy. It is noteworthy that only 13 and 27 percent of the between-school variance in perceived need-support was explained by school factors, considerably less than the explained variance in faculty trust in students and collective teacher efficacy. In Model 1, instructional coherence ($\gamma_{06} = 0.26$, $p < 0.01$) had the strongest, and only statistically significant, relationship with need-support. The effect of instructional coherence attenuated in model two from a statistically significant 0.26 to a non-statistically significant 0.17. Similar to trust and efficacy, PSSPN ($\gamma_{07} = 0.21$, $p < 0.01$) had strongest unique effect, accounting for about 4 percent of the school-level variance.

In summary, PSSPN was related to school-level differences in faculty trust in students, collective teacher efficacy and student perceived autonomy support. Leadership practices surrounding professional development and instructional coherence had moderately strong, positive relationships with the outcome variables; however, the strength of these relationships diminished when PSSPN was included in the analysis. More puzzling was the negative relationship between teacher evaluation and each of the outcome variables. In all cases, favorable perceptions of the evaluation process were associated with lower trust, efficacy and need-support.

**Discussion**

In a given school day, principals are likely to engage in hundreds of conversations with teachers. Some exchanges are short and merely congenial, others longer and professionally substantive. No matter the duration, conversation theory implies that each interaction transmits messages that have potential to reinforce or alter mental representations behind teacher thoughts, beliefs and practices (Scott, 2001). By framing messages around student learning needs, it seems likely that principals can use regular and intentional conversation as

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Need-support Model 1</th>
<th>Need-support Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>School predictors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRL rate</td>
<td>0.05 (0.06)</td>
<td>0.06 (0.08)</td>
</tr>
<tr>
<td>% non-Caucasian</td>
<td>−0.03 (0.04)</td>
<td>−0.04 (0.09)</td>
</tr>
<tr>
<td>Prior math</td>
<td>−0.03 (0.05)</td>
<td>−0.07 (0.04)</td>
</tr>
<tr>
<td>PLO</td>
<td>0.13 (0.08)</td>
<td>0.12 (0.08)</td>
</tr>
<tr>
<td>TE</td>
<td>−0.05 (0.03)</td>
<td>−0.11 (0.07)</td>
</tr>
<tr>
<td>IPC</td>
<td>0.26 (0.07)**</td>
<td>0.17 (0.07)**</td>
</tr>
<tr>
<td>PSSPN</td>
<td>−0.21 (0.07)**</td>
<td>0.21 (0.07)**</td>
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<td>Deviance ($-2\log$ likelihood)</td>
<td>8,696</td>
<td>8,686</td>
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<tr>
<td>$\Delta$Deviance</td>
<td>−11</td>
<td>−10</td>
</tr>
<tr>
<td>Explained school variance (%)</td>
<td>13</td>
<td>27</td>
</tr>
</tbody>
</table>

**Notes:** $n = 93$ schools; $n = 3,301$ students. PSSPN, principal support of student psychological needs; PLO, professional learning opportunity; IPC, instructional program coherence; TE, teacher evaluation. Teacher variables were grand-mean centered and held constant across schools. All variables were standardized to a mean of 0 and standard deviation of 1 to allow. Standard errors are reported in the parentheses. **$p < 0.01$
a strategy to develop a functional instructional core. We tested this idea with principal support of student psychological needs.

Conversation theory (Pask, 1975, 1976) establishes a social-cognitive explanation for the relationship between principal support of student psychological needs and each measured feature of the instructional core. The explanation directs attention to capacity within principal–teacher interactions to form cognitive associations conducive to trust, efficacy and need-supportive instruction. Congruently, evidence on trust, efficacy and need-supportive instruction also address cognitive processes behind their existence (Deci and Ryan, 2016; Forsyth et al., 2011; Goddard et al., 2000). In the absence of direct empirical evidence, these convergent literatures build theoretical explanations for how principal support of student psychological needs may affect relational dynamics in schools and classrooms.

The relationship between principal support of student psychological needs and trust does not follow established evidence on trust formation. Trust beliefs and norms vary based on behavioral patterns judged to be consistent with one party’s role obligations and expectations (Bryk and Schneider, 2002; Forsyth et al., 2011). Such judgments follow discernments of a trustee’s competence, benevolence, openness, honesty and reliability (Tschannen-Moran and Hoy, 2000). Most literature emphasizes a trustee’s behavior as deterministic of trust (Forsyth et al., 2011). Principal–teacher conversations cannot make students exhibit trustworthy behavior. Yet, teachers reported stronger trust in students where they experienced frequent interactions with principals about student learning needs. Not only that, principal support of student psychological needs had a stronger association with trust than the measured formal organizational structures, leading to questions about processes undergirding these relationships.

Conversation theory focuses attention on the social-cognitive process involved in trust formation. Specifically, if and how regular principal–teacher interactions about students build mental associations that teachers consciously and subconsciously draw on to discern student trustworthiness. Principal support of student psychological needs assists teachers in understanding student behavior as situated within a larger social context. Applied to trust discernments, associations about nurturing or thwarting learning contexts enable teachers to understand reasons why some students engage and connect with learning activities and others appear bored and unmotivated. Principals have limited power to control student behavior, but they can influence trust beliefs through the mental representations teachers use to judge and evaluate student trustworthiness.

Similar to trust, the relationship between principal support of student psychological needs and collective efficacy, when situated within efficacy evidence, has a connection to mental representations. Efficacy beliefs form through experiences that inform a judgment of one person’s or a group’s competence to perform tasks effectively in particular circumstances (Goddard et al., 2000). Efficacy judgments are not decoupled from cognitive associations (Bandura, 1997), meaning past and present experiences get filtered through teachers established mental representations of themselves relative to their task context. Even if principal–teacher interactions do not explicitly address efficacy sources, conversation theory (Pask, 1976; Scott, 2001) implies that exchanged information can elicit mental representations from which efficacy judgments are made. We can see how principal–teacher interactions directed toward psychological needs might transmit information useful for framing how faculty members evaluate their collective ability to engage students deeply and authentically in learning.

Mental representations not only control evaluative discernments of students and teaching colleagues, these cognitive structures affect teacher decisions and actions in the classroom. Early expertise research, to more recent evidence on mindsets and teacher beliefs, portray mental structures as contributing differentially to instructional approaches and styles. For instance, expert teachers tend to use rich mental representations of their students’ cognitive abilities and motivators to assess and adapt lessons as needed (Berliner, 2004). Experts also
draw on information rich schemas of instruction to solve problem within the task of teaching (Wasterman, 1991). More recently, Dweck et al. (see Dweck, 2006) find that teachers’ implicit views of student intelligence and ability affect classroom structures as far ranging as student groupings to how teachers recognize and praise achievement. Principal–teacher interactions represent a normalized pathway to cognitive processes behind teaching practices.

**Implications for practice and research**

Beyond evidence addressing the hypotheses, data patterns in the correlation results and findings in the combined HLM models present intriguing implications for leadership practice and research. Practice implications address the use of principal support of student psychological needs with formal structures coordinating professional learning and instructional program coherence. Professional learning opportunities and instructional coherence were associated with school differences in faculty trust in students, collective efficacy and need-supportive instruction prior to the inclusion of principal support. In all cases, explained variance increased when principal support of student psychological needs was added to the models and the unique effects of professional learning and instructional coherence decreased. The consistent pattern suggests a synchronous relationship between formal structures supportive of professional learning and instructional coherence and principal–teacher interactions.

Many structures and routines intended as professional supports use some form of social interactions to encourage regular sense-making within the task context of schools. Learning communities, for instance, enable teachers to share practices, evidence, ideas and stories with colleagues so that knowledge generated from experiences feeds back into practice (Watson, 2012). Similar to teaching colleagues, principals serve as an essential instructional resource when they actively engage teachers in reflecting-on and reflecting-in practice (Robinson et al., 2008). Talk organized by a conceptual framework like psychological needs may provide the boost needed to make professional development opportunities and processes functional.

As with teacher learning, instructional coherence is conceptualized as a dynamic social process organized by structures and routines that establish a fluid equilibrium within the instructional system (Newman et al., 2001). Structures and routines organize teachers, but coherence emerges out of regular and ongoing interactions structured by a clear direction (Honig and Hatch, 2004). Principal–teacher interactions, like those measured through principal support of student psychological needs, has the potential to align an instructional system by building a common conceptual framework from which teachers and leaders collectively design and regularly evaluate the effectiveness of what they are doing.

Research implications emerge from theoretical arguments on relationships found in the study. Evidence established here, and in previous work (Adams and Olsen, 2017), shows strong associations between principal support of student psychological needs and conditions found in effective schools. These relationships exist even when accounting for other leadership practices and school social composition. Open questions remain on the social, psychological and cognitive processes by which conversations function. Future research can test theoretical arguments with principal support of psychological needs specifically or with other forms of intentional talk that would activate social-cognitive processes in similar ways. There is also good reason to examine how intentional conversation interacts with leadership processes and practices used to organize teaching and learning.

Stated simply, conversation is a form of leadership, yet research has not established strong explanatory evidence on the transformative processes involved in principal–teacher talk. We propose that principal–teacher conversations enhance leadership practices and support a vibrant instructional core when intentional messages build mental representations that enable teachers to understand sources of optimal student growth. Such use of conversation extends the functionality of principal–teacher interactions beyond that of teacher control (Gronn, 1983; Lowenhaupt, 2014) and toward an ongoing sense-making and learning process.
References


Further reading


(The Appendix follows overleaf.)
### Appendix

<table>
<thead>
<tr>
<th>Factor loadings</th>
<th>Eigen value</th>
<th>% of variance</th>
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<td>PDO1</td>
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<td>6.25</td>
</tr>
<tr>
<td>PDO2</td>
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<td></td>
</tr>
<tr>
<td>PDO3</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>PDO4</td>
<td>0.87</td>
<td></td>
</tr>
<tr>
<td>PDO5</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>PDO6</td>
<td>0.83</td>
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<tr>
<td>PDO7</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>PDO8</td>
<td>0.89</td>
<td></td>
</tr>
</tbody>
</table>

Cronbach’s $\alpha = 0.97$

| CTE1            | 0.84        | 5.04          | 71.93         |
| CTE2            | 0.87        |               |               |
| CTE3            | 0.84        |               |               |
| CTE4            | 0.77        |               |               |
| CTE5            | 0.80        |               |               |
| CTE6            | 0.79        |               |               |
| CTE7            | 0.81        |               |               |

Cronbach’s $\alpha = 0.91$

| TE1             | 0.91        | 4.78          | 79.59         |
| TE2             | 0.87        |               |               |
| TE3             | 0.90        |               |               |
| TE4             | 0.92        |               |               |
| TE5             | 0.84        |               |               |
| TE6             | 0.77        |               |               |

Cronbach’s $\alpha = 0.94$

| IPC1            | 0.89        | 4.68          | 78.03         |
| IPC2            | 0.90        |               |               |
| IPC3            | 0.88        |               |               |
| IPC4            | 0.90        |               |               |
| IPC5            | 0.82        |               |               |
| IPC6            | 0.75        |               |               |

Cronbach’s $\alpha = 0.88$

| FTS1            | 0.69        | 3.13          | 59.56         |
| FTS2            | 0.79        |               |               |
| FTS3            | 0.83        |               |               |
| FTS4            | 0.75        |               |               |
| FTS5            | 0.77        |               |               |

Cronbach’s $\alpha = 0.80$

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**Table AI.**

Exploratory factor analysis results of the professional development opportunities, collective teacher efficacy, teacher evaluation, instructional program coherence and faculty trust in students.

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A lack of authentic school improvement plan development
Evidence of principal satisficing behavior

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Abstract

Purpose – School improvement planning, especially for low-performing schools, can be conceptualized as a planning process to strategically improve organizational processes, operations and outcomes. However, bureaucratic procedures and related inflexibilities sometimes results in inauthentic plan development. The purpose of this paper is to analyze the extent and ways in which principals engage in satisficing behavior – or being in the realm of “good enough” – when developing school improvement plans (SIPs).

Design/methodology/approach – The authors qualitatively analyzed 364 short-cycle SIPs submitted by principals of 134 low-performing schools participating across three cohorts of a university-based systems leadership program focused on change leadership and school turnaround.

Findings – Eight satisficing behaviors in the SIPs were identified. The five most prominent satisficing behaviors follow: plan content is consistent across schools within a district; a plan or plan features are resubmitted; plan priorities focus solely on test scores; plan timeline is insufficiently considered; and the directly responsible individual (DRI) (to complete tasks) is insufficiently considered. Overall, 80 percent of SIPs contained two to four satisficing behaviors, and fewer than ten SIPs were free of such behaviors or, in the authors’ estimation, completely authentic.

Originality/value – The development of SIPs is mandated for the nation’s lowest-performing schools, but little analysis of such plans has been conducted over the last 20 years. Moreover, although the notion that principals engage in satisficing behavior has been raised previously, to the authors’ knowledge, this is the first study to systematically identify ways in which principals satisfice.

Keywords Principals, Leadership, Satisficing behaviour, School improvement plan, School turnaround

School improvement planning is a common undertaking in the USA and other Western nations (e.g. Fernandez, 2011; Muijs et al., 2004; Strunk et al., 2016). The basic idea behind improvement planning is for educational leaders (e.g. school principals) to develop a plan with measurable outcomes that, when implemented, will result in organizational improvements. Focus areas within plans could include, among others, addressing school climate, improving instructional quality, or implementing data-driven decision making. Such a planning process fits a rational organizational paradigm in which the development and enactment of a school improvement plan (SIP) should result in improved organizational processes, operations and outcomes, such as student achievement in schools (VanGronigen and Meyers, 2017).

An SIP is a physical and/or electronic document in which, at minimum, the following information is provided: organizational goals to be achieved within a stated period of time; action steps to achieve those goals; timelines to direct implementation of action steps and the plan in general; and measurable outcomes to determine the extent to which the plan was implemented and resulted in achieving organizational goals (see VanGronigen et al., 2017 for a more detailed explanation of the school improvement planning process). Thus, from a rational organizational paradigm, if school principals better envision the change they want, identify the right problems, increase their own and others’ preparedness to address these
problems, manage resources and uphold expectations, schools should improve (Chapman and Harris, 2004).

The simplicity of this logic is especially appealing when we consider low-performing schools. We see evidence of this in accountability systems in the USA, UK and elsewhere. Such systems impose external pressures that require low-performing schools to develop SIPs as part of their “turnaround” efforts (VanGronigen and Meyers, 2017). In the USA, federal policies such as the No Child Left Behind Act of 2001 and the Every Student Succeeds Act of 2015 along with opportunities such as the School Improvement Grants program have prioritized improving the nation’s lowest-performing schools. For approximately 20 years, low-performing schools have been required to submit annual SIPs to state education agencies for review, monitoring and evaluation.

Although the development of SIPs is intended to improve goal development, alignment, and completion within schools, there is evidence that the endeavor often lacks rigor and might be designed in counterproductive ways (Mintrop and MacLellan, 2002). SIP templates created by state education agencies might reduce school principal autonomy, constraining authentic plan development and encouraging formulaic responses (VanGronigen and Meyers, 2017). State responsiveness to plans can also lag and lack insight. The annual nature of plans can also reduce school principal flexibility by confining them to what is on paper despite the potential existence of a more adaptive and responsive way forward (e.g. Barringer and Bluedorn, 1999). Not surprisingly, there is some evidence that school principals developing plans engaged in satisficing behavior – in other words, the completion of the plan for its own sake and with minimal authentic investment (Mintrop and MacLellan, 2002; Mintrop et al., 2001).

SIPs, however, have seldom been studied at all. In this study, we add to the sparse body of research on SIPs by analyzing approximately 400 of them to determine if school principals engage in satisficing behaviors when developing plans. This is an important consideration, given how pervasive school improvement planning is in nations with accountability systems. If an embedded assumption of a system is that SIPs should organize and drive change, but the SIPs are developed in substandard or inauthentic ways, that assumptions on which the system is based would appear to be violated. Therefore, we ask the following research questions:

RQ1. In what ways, if at all, do school principals engage in satisficing behaviors when completing SIPs?

RQ2. Over multiple planning cycles, how frequently, if at all, do school principals engage in satisficing behaviors?

Our analysis of SIPs developed by school principals leading low-performing schools is an initial consideration of if, and how, they might engage in satisficing behavior during the improvement planning process.

We turn next to a deeper explanation of our conceptualization of satisficing. After that, we provide a brief review of the literature where we connect school accountability, school leadership of low-performing schools and school improvement planning. We then provide a description of our study context, sample, and methodology. Results from the study follow. We conclude with an overview of results followed by a discussion of implications for research, policy and practice.

Conceptual framework: what does it mean to satisfice?

In his conceptual formulation of satisficing, decision-making scholar Herbert Simon (1957) posits that the rational choice theory – or the position that an individual has preferences and acts accordingly (Krosnick, 1991) – is unrealistic because it fails to account for boundaries.
That is, people can be only partly rational. Bounded rationality (Simon, 1978) suggests that people’s rationality is limited by typically incomplete knowledge or understanding, time constraints, and the complexity of the problem at hand. And there are costs to gathering information, working through processes, and accounting for multiple perspectives and interests that negate a person or organization’s ability to be completely rational. Although maximizing — or selecting the best option from all available possibilities — is ideal, it is frequently unrealistic (Simon, 1956).

As a substitute, people instead satisfice, which is a blend of the words satisfy and suffice. The basic notion in administrative behavior is to search for or review available alternatives until identifying a minimally acceptable threshold or way forward. There is no optimal solution — or at least one cannot be determined. Thus, decisions are made and actions are taken in the realm of “good enough.” More clearly, as soon as a person discovers an alternative “meeting his level of aspiration, he would terminate the search and choose that alternative” (Simon, 1978, p. 356).

In terms of SIPs that are externally driven — be it state or district policy, federal compliance or some combination thereof — plan development efforts might lack authenticity because school principals must complete plans that are simply “good enough” to fulfill those externally-driven requirements. These requirements also serve as the foundation by which to determine plan quality (Mintrop et al., 2001). In other words, the more a plan resembles what an external entity rewards, the more likely a school principal develops a plan that mirrors what is rewarded. This can result in satisficing behavior in which the school principal develops a plan that checks boxes within a compliance structure, but that might not create the vision or practical alignment to attain it. Instead, meeting externally-driven reporting expectations and requirements might take precedence over creating plans that prioritize authentic, context-specific improvement in low-performing schools (Duke, 2015).

**Literature review**

**SIPs within the USA**

School improvement planning is not new. School principals have been planning their academic years for some time. Much of their planning has focused on operations and management, including budgeting, class schedules and teacher assignments (Tyack and Hansot, 1982). Effective schools research highlighted that effective school principals were doing more: they set the school’s vision and detailed its mission; intentionally organized instruction based on data; and developed a culture of learning (Edmonds, 1979). In sum, research increasingly shows that effective school principals are actively engaged in planning.

The few existing studies of SIPs in US schools (Fernandez, 2011; Huber and Conway, 2015; Mintrop and MacLellan, 2002; Mintrop et al., 2001; Strunk et al., 2016), however, focus on plan quality and their relation to student achievement outcomes, the latter being in large part a reflection of national and state accountability polices (VanGronigen and Meyers, in press). Researchers generally report positive relationships between plan quality and student achievement in English/language arts and mathematics (e.g. Reeves, 2011). That is, better plans are correlated with higher student test scores, even after controlling for various factors such as student demographics and prior student achievement levels (e.g. Huber and Conway, 2015). Of course, as these researchers point out, correlation is not causation. Thus, Fernandez (2011) also controlled for various school and student factors (e.g. school type) and conducted regression analyses, finding that plan quality remained a predictor of student achievement, but cautioned that better school principals might write better plans. In a more recent analysis of plan quality in the Los Angeles Unified School District, Strunk et al. (2016) examined SIPs from schools participating in a multi-year school improvement initiative. They found initially-strong relationships between plan quality and programmatic outcomes lessened over time. A common strand across these studies is that, overall, SIP quality is weak.
Interestingly, almost none of the SIP studies since 2000 leverage qualitative methods, limiting how we consider research findings in relation to the actual practice of school improvement planning. Two related studies (Mintrop and MacLellan, 2002; Mintrop et al., 2001) serve as a critical exception. In their initial study, Mintrop et al. (2001) analyzed nearly 100 SIPs developed for low-performing elementary and middle schools in Maryland, Kentucky and the City of San Francisco to assess whether high-stakes accountability conditions influenced plan content. They analyzed plans on content focus, alignment and the degree to which plans internalized external (i.e. state) expectations. Among their numerous findings, they report that external expectations did, in fact, influence plan goals and objectives.

More specifically, in terms of focus – the activities identified across domains to improve the school (e.g. quality of instruction) – they reported that “the number of activities planned by schools on probation for the school year was staggering […] Proposed activities were spread widely across all domains. This occurred independently of design differences among the three accountability systems” (p. 208). Further, in terms of alignment – the congruence of stated goals with external expectations, such as state education agency mandates – they found that almost every school incorporated externally-generated goals into its SIP without alteration, suggesting that a low-performing school’s typical response to accountability pressures was to adopt pre-established goals whether or not they were contextually appropriate. Indeed, “it is conspicuous that goals are almost never interpreted in view of site conditions and realistic growth expectations on the part of practitioners” (p. 210). Finally, in terms of internalization – the extent to which plans specifically address their unique contextual conditions – in areas in which schools were less constrained and could expand upon their context, “their philosophy and mission statements tended to be boilerplate, conventional, and to cast a wide net” (p. 212). The researchers concluded that the plans were isomorphic despite coming from three accountability systems; that is, external accountability systems were driving the production of plans that looked quite similar despite being developed in different contexts (e.g. DiMaggio and Powell, 1983).

In a subsequent study, Mintrop and MacLellan (2002) supplemented their previous work with case study data collection in seven Maryland schools. They found that a vast majority of school needs assessments identified needs that were directly aligned with content that Maryland’s accountability system measured. Within the SIPs, most schools identified external factors as causes of their decline, and goals were mostly quantitative performance indicators established by Maryland’s accountability system. Case study interviews indicated that plan development was primarily conducted by a small core of administrators with a writing process “steered from outside the schools” (p. 295). District and state officials reviewed plans and tailored them for state education agency approval. As a result, SIPs across schools mirrored one another while being streamlined through a state lens. Such a process, both to us and Mintrop et al., appear to represent satisficing behavior.

SIPs outside the USA
Research on SIPs outside the USA has also been sparse and has become dated; almost all studies were conducted near the turn of the twenty-first century. Studies in Europe and Australia highlighted the importance of quality plans in case study examples of improved schools (e.g. O’Donoghue and Dimmock, 1996; Wikeley et al., 2005). Other studies of SIPs have considered their role within accountability systems, such as the UK in response to government inspections (Broadhead et al., 1998; Cuclle et al., 1998), and the Republic of Ireland in response to whole-school evaluations (McNamara et al., 2002). Both sets of studies suggest that systematically organizing processes is important, but various levels within the educational system are insufficiently involved. More recently, Caputo and Rastelli (2014) found that plan quality in Italian schools was correlated with better organizational outcomes. None of the studies that we were able to identify, however, addressed the extent to which educational leaders, such as school principals, engage in authentic plan development (e.g. not satisficing).
Traditionally, school principals have developed SIPs to account for goals and actions for the duration of an academic or calendar year (Fernandez, 2011; Huber and Conway, 2015; Strunk et al., 2016). However, there is a significant body of business literature that underscores the advantages of a short-cycle planning approach. Most notably, short-cycle planning practices permit organizations to be more agile and better respond and adapt to rapid environmental changes (Barringer and Bluedorn, 1999). Although short-cycle planning can result in organizations losing sight of longer-term goals (i.e., “short-termism,” Martin, 2015, p. 1), some education scholars suggest that a short-cycle focus can be leveraged as an effective improvement practice (Duke et al., 2013; Mintrop, 2016) by avoiding annual plan development that is only assessed at the end of the year, or as an “autopsy” (Duke, 2015, p. 89). Mintrop (2016) frames such an approach as “design-based school improvement” in which educational leaders identify a few “wicked” problems and their root causes before iteratively testing solutions over a number of short planning cycles. Similarly, Bryk and colleagues (2015) argue that learning fast is critical to improving educational processes. Collectively, scholars are increasingly suggesting that school principals and leadership teams have an opportunity to make mid-course adjustments to goals, strategies and enactment (VanGronigen and Meyers, 2017), which could lead to more authentic engagement in the process.

Summary

School improvement planning has been a critical part of school leadership for decades, spanning eras of effective schools (Edmonds, 1979), comprehensive reform (Borman et al., 2003) and accountability (Duke, 2015), as well as into the foreseeable future (Chapman et al., 2016). A built-in assumption has been the technical rational perspective that better planning should result in better organizational outcomes and higher levels of student achievement (VanGronigen and Meyers, 2017). Educational leadership preparation programs typically align to national and state policies (Anderson and Reynolds, 2015), which, in the UA, increasingly mandate the development of SIPs, especially in low-performing schools (Duke, 2015). These policy pushes appear internationally, as well (e.g. Caputo and Rastelli, 2014). In general, research does suggest that better SIPs are related to better organizational outcomes and high levels of student achievement (e.g. Fernandez, 2011). Despite the prevalence of school improvement planning in policy and practice, it has been seldom studied (Duke, 2015). Instead, the process has typically been considered a part of larger initiatives, such as a district-wide improvement strategy (Strunk et al., 2016). Recently, some scholars now suggest that more frequent short-cycle planning iterations could result in more cycles of implementation and, thus, greater learning and improvement (Bryk et al., 2015; Mintrop, 2016). This study is an analysis of this short-cycle approach, specifically the ways in which principals engage in more satisficing behavior as opposed to authentic behavior.

Methods

Our data context

The University School Turnaround Program (USTP) consists of nearly three years of integrated activity focused on developing systems leadership to improve low-performing schools. USTP contends that the short-cycle SIP (e.g. 90-day plan) is a fundamental lever for this endeavor (e.g. Duke, 2015). A programmatic assumption is that consistently addressing priorities in short-term planning cycles will result in improved proximal and distal outcomes, which aligns with Mintrop’s (2016) design-based school improvement approach. In addition, USTP asserts that subsequent iterations of short-cycle SIPs can be informed by progress on meeting previous goals, and remaining (or new) challenges are unearthed by the immediate prior planning cycle (Bryk et al., 2015; Duke, 2015). When schools partner with
the USTP, they tentatively agree to produce at least three short-cycle SIPs during their two-year partnership (Fall Year 1, Spring Year 1, and either Fall or Spring Year 2, if not both). The short-cycle SIPs are completed on a USTP template and become the central organizing instrument of the USTP–school partnership.

Sample
We analyzed short-cycle SIPs from schools participating in three recently completed USTP cohorts (Cohort 1 from 2011–2012 to 2012–2013; Cohort 2 from 2013–2014 to 2014–2015; and Cohort 3 from 2015–2016 to 2016–2017). Cohort 1 enrolled 46 schools, Cohort 2 enrolled 42 schools and Cohort 3 enrolled 46 schools, for a total of 134 schools in this study. The schools came from 31 districts within 12 states. Using the Common Core of Data urban locale coding scheme, 70 schools were located in urban cities, 18 in suburbs, 28 in towns and 19 in rural areas. All but seven were Title I schools with composite free or reduced price lunch percentages ranging from 37.8 to 100 percent. The schools also differed by size (fewer than 200 to more than 3,000 students), grades enrolled (elementary, middle and high schools) and demographics (almost exclusively white to almost exclusively minority). Table I lists select characteristics, such as the number of schools by school level, average enrollment, average percentage of students eligible for free or reduced price lunch, average number of full-time teachers and average teacher/student ratio. In total, we examined 364 short-cycle SIPs over four planning cycles with 123 plans from the first cycle, 76 from the second cycle, 109 from the third cycle and 56 from the fourth cycle.

Data sources
We studied 364 short-cycle SIPs over four cycles and across three cohorts. As noted earlier, participating school principals agreed to submit at least three plans over two years, but there were no programmatic ramifications for not doing so. Thus, plan submission was both low-stakes and inconsistent. However, USTP personnel better emphasized the plan submission for Cohorts 2 and 3, and more school principals in those cohorts submitted more SIPs than school principals from Cohort 1. For all cohorts, school principals were instructed to focus on two to five priorities they believed that, if met, would drive school improvement forward. Within the USTP’s template, there were clear designations for school principals to identify priorities, action steps, timelines and other important planning areas (e.g. necessary resources). Generally speaking, the template provided by USTP to partners includes opportunities for educational leaders to provide information in the following domains: vision statement, priorities, process outcomes, progress indicators, action steps, school context, root cause analysis, sequencing, schedule/timeline, alignment, DRIs and supports (see VanGronigen et al., 2017 for more information about these domains).

<table>
<thead>
<tr>
<th>School Level</th>
<th>n</th>
<th>Enrollment</th>
<th>Free/reduced lunch (%)</th>
<th>Full-time teachers</th>
<th>Teacher/student ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>80</td>
<td>487</td>
<td>82</td>
<td>24</td>
<td>15.9</td>
</tr>
<tr>
<td>Middle</td>
<td>28</td>
<td>629</td>
<td>75</td>
<td>33</td>
<td>16.2</td>
</tr>
<tr>
<td>High</td>
<td>26</td>
<td>1,308</td>
<td>73</td>
<td>63</td>
<td>17.3</td>
</tr>
<tr>
<td>All schools</td>
<td>134</td>
<td>673</td>
<td>79</td>
<td>33</td>
<td>16.2</td>
</tr>
</tbody>
</table>

Table I. Select characteristics of sampled schools (means)

Note: The numbers for enrollment, the percentage of free and reduced price lunch, the number of full-time teachers employed within the school and the teacher/student ratio are means across each school level (e.g. elementary, middle, high)
Data analysis
To answer the research questions, we returned to our basic conceptualization of satisficing behavior: The minimum level of effort necessary to complete a task for its own sake (i.e. limited authentic investment) (Mintrop and MacLellan, 2002; Mintrop et al., 2001; Simon, 1957, 1978). Little research on satisficing behavior in education has been conducted, so we did not have an existing framework to guide our analyses. Instead, we developed a set of guiding questions to help us first identify examples in SIPs of what seemed to be satisficing based off Simon’s (1957) conception and the more recent work by Mintrop et al. (2001) and Mintrop and MacLellan (2002). Specifically, we began the review process by asking the following questions while reading SIPs:

(1) Is any information (i.e., SIP data) missing or incomplete?
(2) Does any information fail to respond to SIP template prompts?
(3) For each SIP priority, is information provided in one part of the SIP template (e.g. action steps) unrelated to information in other parts (e.g. resources)?
(4) Are there patterns that could be suggestive of decreased motivation due to more challenging template prompts (e.g. root cause analysis) or fatigue (e.g. the third priority area being less developed than the first one)?

As we went about answering these questions for each of the 364 SIPs, both of us began to identify patterns that appeared to be examples of satisficing behavior. We met at multiple intervals to discuss our coding and emerging themes (Patton, 1990). After all SIPs were reviewed using the above questions, we met again to review the satisficing behaviors each of us had identified separately. After discussion, we agreed that only patterns that both of us separately identified as satisficing behavior would be retained (see Miles and Huberman, 1994 for a more detailed explanation of the pattern identification and data reduction process in qualitative research). After reviewing all the behaviors, we devised labels for them and then asked an external reviewer with considerable experience developing and researching SIPs to review and provide feedback on identified behaviors, patterns and labels. The external reviewer asserted that one behavior we initially coded as satisficing was not, in fact, an example of satisficing. Incorporating that feedback, we finalized a list of codes that exemplified satisficing (Patton, 1990; see list below of these satisficing behaviors).

The list of satisficing behaviors identified in short-cycle SIPs is as follows:

(1) plan content is consistent across schools within a district;
(2) a plan or core plan features are resubmitted;
(3) plan priorities focus solely on test scores;
(4) plan timeline is insufficiently considered;
(5) the DRI is insufficiently considered;
(6) priorities are incomplete or unimportant;
(7) root cause analysis is unrelated to priorities or goals; and
(8) key resources are unidentified.

We then randomly selected four schools and retrieved their SIPs to code against the list of satisficing behaviors in order to establish inter-rater reliability. In total, we reviewed 13 SIPs (two schools with four plans, one school with three plans and one school with two plans) and separately coded each SIP for each satisficing behavior. We coded each behavior as binary: Either it was evident (1) or not evident (0). We then analyzed our codes to determine how consistently we both identified the same satisficing behaviors within a plan. We calibrated
inter-rater reliability in two ways (Miles and Huberman, 1994; Saldaña, 2015). First, we calculated reliability by dividing the number of instances we both identified the same satisficing behavior for a given plan by the number of instances either or both of us identified any satisficing behavior for a given plan (IRR: 25/32 = 0.78). Second, we calculated reliability by dividing the number of instances we differed in our rating (i.e. one of us identified a satisficing behavior in a SIP while the other did not) by the number of opportunities we could differ in coding and subtracted that from one (IRR: 1 – [5/88 or 0.06] = 0.94). We also discussed our five differences to understand each other’s perspective and make a final coding determination for those specific codes. The first author then completed the binary coding for all remaining plans.

Limitations
There are a number of limitations to this study. First, as an initial study of satisficing behavior in schools, accurately identifying such behavior is built upon our construction of what it actually means to satisfice. We attempted to mitigate this issue by focusing on a topic that we have recently studied at length (VanGronigen and Meyers, 2017; VanGronigen et al., 2017). We also had robust conversations about what we were identifying as satisficing behaviors and why. Finally, an expert external reviewer provided substantial feedback on our identified patterns and emerging coding scheme. However, we fully acknowledge that the results of this study are our interpretations of what it means to satisfice and how we saw satisficing in the plans. In future studies, we will have access to school principals and others as they develop plans and will interview them about their planning decisions.

In addition, satisficing behavior identified in this study is limited to the data contained within the SIPs. Without interviews or other data sources to triangulate results (Denzin, 1978), we are unable to determine if school principals had substantive rationales for the behaviors we identified as satisficing. For example, perhaps the school principal submitted an SIP to meet a USTP deadline, but continued to develop the SIP separately or later adjusted the SIP based on USTP feedback. We recognize that some examples of satisficing behavior might be justified, but our close relationship with the provider and experience on the delivery side of the partnership suggests to us that such misidentification is likely infrequent.

Perhaps the most critical limitation is that we approach this research with an inherent belief that satisficing behavior is almost always undesirable. As conceptualized by Simon (1957) and extended by Mintrop et al.’s reviews of SIPs (Mintrop and MacLellan, 2002; Mintrop et al., 2001), the simple explanation of satisficing behavior is that someone is doing something “good enough” to accomplish the task. There is always the possibility that competing demands and/or contextual issues makes satisficing the appropriate behavior. For example, a school principal who is writing an SIP near a due date might encounter an emergency that diverts attention from fully developing it. While we acknowledge there certainly are exceptions, the theoretical construct as designed assumes satisficing behavior is generally unproductive.

Results
In this section, we report the ways in which school principals appeared to engage in satisficing behavior when developing short-cycle SIPs. Overall, only 18 of the 364 (~5 percent) plans did not demonstrate any satisficing behavior, and four of those submissions were from the same school principal. In fact, more plans – 21 of them (~6 percent) – showed satisficing behavior in at least four (or half) of the eight coded categories listed in “satisficing behaviors identified in short-cycle SIPs.” The majority of plans contained one, two or three satisficing behaviors (23, 45 and 24 percent, respectively). The number of satisficing behaviors was relatively constant across the four submission time points (e.g. Fall Year 1, Spring Year 1). However, patterns of satisficing behaviors varied over time. A simple analysis comparing the number of
satisficing behaviors in the first plan submitted to the last plan submitted by each school revealed that 32 percent of plans had fewer types of satisficing behaviors, 27 percent had more types of satisficing behaviors and 41 percent had no change.

We now turn to a more nuanced review of the various types of satisficing behavior we identified in the plans. Explanations as to why the data suggests satisficing are provided, and we also include discussion and examples to illustrate satisficing by type.

Plan content is consistent across schools within a district
Overall, 12 percent of plans were strikingly similar across schools within the same districts. Interestingly, this was most common in the Fall Year 1 semester when 29 percent of plans satisfied in this way. This type of satisficing occurred in eight districts, happening in one district in two different cohorts. District urbanicity – rural, town, suburban or urban – was not constant. However, occurrences in large urban districts accounted for most of the schools identified. For example, all 12 USTP schools from one urban district submitted very similar plans in Fall Year 1. We did not code for satisficing if priorities were aligned across schools because USTP encouraged districts to think about big ideas for USTP-member schools to address. Instead, these schools frequently had the same or similar action steps, progress indicators, timelines and other more nuanced features.

For example, two schools in one district submitted plans in which the priorities varied slightly, but root cause analysis language and desired outcomes were the same despite the schools being in different contexts. Moreover, the nine action steps for the first priority were identical across the plans. The necessary resources were also identical, as were the locations of empty cells in the plans. While this example was one of the more blatant ones, it, and other across-schools examples of satisficing, suggests that either district leaders heavily influenced the development of some plans, some school principals were adopting their colleagues’ work for their own school context, or some principals were collaborating to such an extent that there was little discernable difference in plans.

Taking two elementary schools in one small district as another example, School A stated a priority as “Data-based collaboration is not being used to change teacher practice and effectively increase student achievement” and indicated its desired outcome as “A system of collaboration that utilizes data to inform instruction and improve teacher practice.” School B’s stated priority and desired outcome read quite similarly: “Teachers are not using data-based collaboration to inform their decisions about next steps in instructional delivery and to improve instructional practices” and “A system of collaboration that utilizes data to effectively drive instruction and improve teacher practice.” Subsequent action steps displayed similar patterns in order and content for all priorities provided in the plans from both School A and School B. Similarly, all five elementary schools in another large suburban district submitted close versions of the same plan. Each of the schools identified “students with disabilities did not meet proficiency benchmarks” as a priority to solve. Moreover, each school indicated that a long-term performance goal was to “reduce the failure rate by 10% on the spring [assessment].” The root cause analysis for these priorities was also the same. Perhaps most interestingly, the action steps varied by school, but every action step was listed verbatim in at least two schools’ plans. In other words, no action step was unique to one school.

A plan or core plan features are resubmitted
A quarter of plans submitted in time points 2, 3 or 4 had significant amounts of plan features copied from previous plans, including, in some cases, whole plans. We note here a distinction between plans with similar focus and content, perhaps even some copied content, which demonstrated change or advancement over time. That is, some plans extended the work of plans submitted previously, but not all prior action steps were satisfactorily
completed and thus reappeared. We did not code these as satisficing behavior. Instead, our results showed that 25 percent of plans submitted in time points 2, 3 or 4 pulled significant amounts of information from prior plans without any evidence of advancement or completion of goals. There were two primary submission patterns to this satisficing behavior. First, the content of plans submitted in the Fall semester of either academic year reappeared in the Spring semester of that same academic year. Second, content of a plan submitted in either semester of the first academic year reappeared in the first submission — whether Fall or Spring — of the second academic year. It is also worth highlighting that the percentage of plans coded as simple resubmission satisficing increased over time: 20 percent in Spring Year 1, 24 percent in Fall Year 2 and 32 percent in Spring Year 2.

These results also did not consider priority or root cause analysis language that was similar across plan submissions because those issues might take more than one semester to fully address (e.g. introducing professional learning communities). Instead, this satisficing behavior was coded primarily based on action steps. For example, one school’s Fall Year 2 and Spring Year 2 plans began with the exact same action step: “Provide, review, and utilize a structured protocol (based on Data Driven Instruction) to analyze next steps in instruction based on data from Semester exams and MAP data.” The subsequent action step was also identical. The third action step in these same plans represented a related way school principals satisfied: making slight, and often insignificant, alterations from the previously submitted plan. For example, the Fall Year 2 plan stated, “Teachers will create 3/6/9 week action plans based on outcomes of data review and Post Assessment Conference.” In the following Spring Year 2 plan, everything remained the same, except “3/6/9” was replaced with “9.” In more egregious cases, plans were resubmitted in their entirety. For example, one high school submitted the same plan for the spring semester as it had for the previous fall. The spring submission did not even include an updated the timeline, so the completion dates for many action steps were still listed for July and August despite the plan being submitted the following January.

Plan priorities focus solely on test scores
A quarter of plans identified their priorities as increasing student test scores. As noted previously, the USTP plan template changed between Cohort 1 and Cohort 2. For Cohort 1, the plan template did not ask for student test score goals to be listed in a separate section. Thus, approximately 45 percent of plans from Cohort 1 prioritized student test scores whereas only about 17 percent did so in Cohorts 2 and 3. A few examples of priorities focused on student test scores were: “Improve student reading achievement”; “Closing the achievement gap”; and “The number of students scoring proficient on [the] math assessment will increase by 47%.” None of these types of priorities suggested thoughtful consideration of what levers need to be pulled to realize improvement, such as organizational structures, climate or culture, instructional practices or data use.

We concede that, in some cases, plans including test scores as a priority might have more to do with poor or weak plan development than satisficing behavior. We have discussed this in more detail elsewhere (VanGronigen et al., 2017). However, basing improvement efforts on student test scores alone results in plans that are typically rudderless because priorities are so broad that no one particular priority offers clear direction (e.g. increase mathematics scores by 5 percent). To expand on this, we highlight one school principal’s plan that we repeatedly identified as satisficing. The school principal identified “low proficiency in math” as the challenge and “increasing scores on the math assessment by 47%” as the performance goal. However, the action steps to addressing this challenge included developing interim assessments, improving teacher data analysis, requiring the submission of daily lesson plans, streamlining grade-level team meetings and increasing instructional leadership with more classroom visits. Extending a prior example, all of the plans from schools in one district
indicated a priority as a 10 percent reduction in failure rate regardless of school, underscoring how little consideration to context had been given at the school and/or district level. We determined that these types of cases represented satisficing behavior because the plans are responding to policy demands (i.e., increase test scores to exit sanctions), but the priority is not actually meaningful in terms of altering how the school operates. The resulting actions steps are not coherently aligned. In sum, from our review of these SIPs, prioritizing the increase of student test scores appears to be responsive to the language of accountability systems, but irrelevant to guiding change. Thus, such priorities are easily identified, especially for low-performing schools, while providing the illusion of being responsive to potential accountability sanctions.

**Plan timeline is insufficiently considered**

Timelines were unquestionably the most frequent, persistent and obvious examples of school principal plan satisficing. Approximately 86 percent of plans were identified as satisficing in this regard. In total, 106 schools that submitted multiple plans were identified as satisficing timeline development in their initial submission (e.g. Fall Year 1). Of them, 100 (92 percent) still satisficed in their final submission while only 9 (8 percent) did not satisfice in their final submission. Thus, there appears to be little net improvement.

There were a number of ways school principals appeared to engage in satisficing behavior regarding timelines. Some noted that an action step would occur in relatively undefined ranges such as “quarterly,” “ongoing,” “by March 1” or “August-December.” A few indicated when an action step or activity was to start (e.g. “start Aug. 26”), but failed to provide further detail about how or if it would continue, or when it would or should be completed. In addition, some plans had timelines that were not sequenced. In one plan, for example, the first action step was scheduled for September 7, but subsequent action steps were slated to occur in August. Most interesting to us, many plans provided clear timelines, but they did not extend beyond the first month of the semester despite promoting a 90-day planning horizon. Instead, professional development and related activities might be scheduled prior to school starting, perhaps on dates such as August 17 and 24. At that point, plans frequently either had no additional action steps for a given priority – or they might have an extension activity the following month (e.g. September), but then no action steps for October, November or December. Much of the work appeared to be frontloaded, an issue we return to in the discussion section. In another example, one school’s plan included three priorities – each with four action steps – for a total of 12 action steps. Listed below are the four action steps and timelines for the first priority:

1. professional development on effective PLC development (August 17);
2. professional development on lesson planning and common interim assessment development (ongoing);
3. professional development on effective data analysis and tracking (ongoing); and
4. PLC monitoring calendar will be created and used to review each PLC’s progress toward implementing effective practices (August 17).

The timelines for other priorities and action steps are essentially the same throughout the plan, suggesting that the principal and school leadership team had not fully considered what, if any, action steps to take during the academic year.

**The DRI(s) is insufficiently considered**

In the USTP plan template instructions, the school principal was instructed to list the person(s) directly responsible for ensuring each action step’s completion. During conversations
with district and school leaders, USTP personnel explicitly instructed school principals that
they should not be the DRI on more than a few action steps because leadership and
management responsibilities within schools should be distributed; typically, the DRI should
be one to two people to ensure someone is clearly responsible for oversight and eventual
completion; the DRI should be named explicitly; and, most importantly, the school principal
is not overburdened.

However, there were numerous examples within the plans of the opposite of USTP-
provided instructions. In one plan, for example, the DRI listed positions (e.g. school
principal), not individuals’ names. In some cases, the plan simply identified “administrator”
and in other cases “administrators,” making it difficult to discern which administrator was
ultimately responsible. In other plans, “teachers” both collectively and generically were
identified as responsible for some action steps, perhaps simultaneously assigning everyone
and no one to be responsible. Some plans were more nuanced in this type of obfuscation,
assigning multiple people, perhaps even by name, but who had very different
responsibilities. For example, plans might assign an assistant principal, an instructional
coach, and a lead teacher as the DRIs for an instructional development action step. Some
school principals also submitted plans in which they identified themselves by title or name
as the DRI for every action step listed. In another example, multiple actions steps were listed
within one cell. In a subsequent cell, there were then lists of 5–12 names. It was nearly
impossible to then determine which of the people listed were responsible for which specific
action steps. In these types of examples, one constant was that school principals embedded
their name into each grouping of DRIs, making them responsible – directly or indirectly –
for all or nearly all action steps.

In general, school principals frequently appeared to provide insufficient consideration as
to whom was directly responsible for completing action steps or monitoring progress.
Nearly two out of every three plans (62 percent) were identified as satisficing for DRI.
In total, 75 schools that submitted multiple plans were identified as satisficing in their initial
submission. Of them, 58 (77 percent) still satisficed in their final submission and only 17
(23 percent) did not satisfice in their final submission. However, 12 schools that did not
initially satisfice ended up satisficing in their final submission. Thus, like the results on
timeline, there appeared to be little net improvement over the four cycles.

Three less frequently identified satisficing behaviors
The following three satisficing behaviors occurred in less than 10 percent of the SIPs – when
they were present, however, they were stark and often bundled with other satisficing
behaviors. Although beyond the scope of our analyses, being bundled seems intuitive. If a
school principal dismissed priority selection or root cause analysis when formulating a plan,
it seems unlikely that subsequent plan components, such as action steps or monitoring
progress, would be considered sufficiently. In that vein, if multiple satisficing behavior
types appeared in a plan, why would a school principal feel compelled to authentically
engage, for example, in identifying key resources, but satisfice root cause analysis?
Nonetheless, these three satisficing behavior types are distinct. We now discuss them briefly
and provide examples.

Priorities are incomplete or unimportant. Priorities, or occasionally pitched in plans as
goals, are two to four areas within plans that school principals are focused on improving
over the course of a semester (i.e. 90-day cycle). We discussed above how many priorities
focused on increasing student test scores, especially within Cohort 1. When school
principals responded by focusing solely on increasing student test scores, they were
potentially responding to accountability pressures without giving consideration to how to
actually improve the school (e.g. which specific levers needed pulling).
However, for satisficing behavior identified here, school principals seemed to recognize that a priority should address a current, context-specific problem of practice, but they either prioritized areas that were tangential to improvement or developed incomplete rationales or arguments for chosen priorities. For example, one plan listed multiple priorities focused on understanding the predictive value of interim assessments. However, no clear improvement objective was provided. Instead, the plan stated, “We do not know if data from [interim assessments] accurately predicts how students will do on the state assessment,” and the plan’s long-term goal as stated by the principal read, “I will know if there is a correlation between the second quarter interim assessment or winter performance assessment and [the state assessment].” Thus, the way the plan was constructed indicated that the predictive value would result in increased student achievement, but there was no articulation about how predictive scores would actually be used to improve instruction or implement any other specific improvement strategy. In a more robust example, one plan included the following priority: “Insufficient understanding of [instructional planning and data-driven instruction] process when looking at data and planning for instruction. Lack of accountability for the processes. Literacy will continue to be the main focus.” Within this priority, there were multiple possible leads: building instructional knowledge, building data understanding, applying data analysis to instruction, increasing accountability within the school instructional processes, and improving literacy instruction or some scaffolded combination thereof. As written, this priority was a collection of ideas or possibilities that failed to offer a specific direction.

*Root cause analysis is unrelated to priorities or goals.* Root cause analysis is intended to be an area within the plan template for school principals to use data to provide rationales that make explicit why a priority has been chosen, and perhaps to a lesser extent, how subsequent action steps, if completed well, address those priorities. Root cause analyses were undeniably weak across these plans (VanGronigen and Meyers, in press). Examples of satisficing within this category included inarticulate, lazy responses that appeared to make little to no effort to consider why a problem within the school may exist. For example, one school principal prioritized increasing “the level of rigor in the classroom by using a common academic language in all classes and school-wide.” Whether that was a viable priority or not is outside this study’s scope, but the root cause analysis provided in the plan to get to the heart of the problem stated the following: “Given that students do not know or practice academic language, students struggle with assessments and vocabulary.” There are substantial logical leaps with this root cause analysis and the plan offered no data or evidence to support the priority. This appears to be a clearer example of satisficing root cause analysis. Anecdotal evidence from several USTP cohorts suggests that school principals struggle conceptually with root cause analysis and how to conduct it effectively.

*Key resources are unidentified.* The expectation that school principals would identify fiscal, human and social resources necessary to implement the actions and measure progress toward action step and goal attainment was added to the final cohort’s template. In total, 13 percent of Cohort 3 plans demonstrated satisficing behavior for resource identification. Some plans left many of the cells blank, adding only general references, such as “staff member volunteers” or “staff volunteers” as extensions to simpler action steps. Others included vague references, such as “engaging school’s resources,” in which no actual consideration of the issue was evident.

**Discussion and conclusion**

SIP quality has implications for schools. It is important to school structure and organization, vision and goal setting, and progress monitoring (VanGronigen and Meyers, in press). Not surprisingly, pre-service and in-service school principal training programs frequently offer practical experience developing them in alignment with the US Government’s mandate.
for SIP development in low-performing schools (e.g. Gardiner and Enomoto, 2004). Research suggests that plan quality is related to plan implementation and, ultimately, student achievement outcomes (e.g. Fernandez, 2011; Strunk et al., 2016). Thus, there are multiple streams of research that suggest SIPs matter. Still, nearly 20 years after Mintrop et al. (2001) and Mintrop and MacLellan (2002) found substantial evidence of satisficing behavior, we continue to find a lack of authentic school principal engagement in SIP development.

We wonder if leaders throughout the education system – such as district leaders, school principals and leadership teams, preparation program decision makers, third-party external providers and state education agency staff – understand the implications of shirking something like the school improvement planning process. Our results are replete with examples that implicate various levels within the larger system. School principals submitted plans in which there were blank cells and incomplete thoughts. In many cases, the same plan or significant aspects of the same plan were submitted multiple times. Behaviors such as these suggest perhaps an unwillingness or inability to engage fully in a meaningful planning process. More broadly, such behavior appears to have been condoned. District leaders and USTP personnel reviewed and approved these SIPs. In some districts, plans across schools were similar with some even exact copies. For district leadership to approve, and perhaps endorse or advance, these plans suggests that district leaders might also be engaging in satisficing behavior (i.e. we know that struggling schools often have similar challenges, so we can abbreviate the planning process by having school principals co-develop plans with or copy plans from colleagues in other schools).

Part of the challenge at all levels might be understanding the difference between skillsets, knowledge, and behavior (VanGronigen and Meyers, in press). In our earlier framing of this paper, we are not suggesting that school principals or district leaders will be equipped to develop, implement, and monitor high-quality SIPs. There is undoubtedly a cycle of improvement requiring knowledge, practice, and reflection (e.g. Bryk et al., 2015). The distinction here is about effort and engaging in the process to develop authentic plans that are, presumably, the best plans that school principals can produce. SIPs that prioritize increasing student test scores or are resubmissions of prior plans demonstrate to us a lack of authentic engagement in the school improvement planning process.

Another potential challenge stems from the literature on survey research, which suggests that respondents engage in satisficing behavior as a result of cognitive burden (Krosnick, 1991; Lenzner et al., 2010). School principals have a demanding job that is only amplified in low-performing schools (e.g. Duke, 2015). With many competing demands on their time, they might not see school improvement planning to be as important as other potentially more immediate aspects of their job. Moreover, without sufficient time and motivation, they could view short-cycle planning as an even lower priority than annual planning because a failure to submit annual plans may trigger accountability sanctions. In this vein, perhaps at all levels, a combination of mental fatigue, time constraints or competing demands might relegate improvement planning to a status less urgent than other aspects of school systems leadership work.

However, at least in part, more nuanced satisficing behaviors suggest to us something different: a lack of recognition about how all of the pieces of a SIP fit together. It is our impression that school principals consistently thought less about timelines and DRIs, and, to a lesser extent, resources and progress indicators. Many of the plans showing satisficing behavior in these areas appeared complete upon an initial review. Timeline and DRI cells contained words, but frequently those words did not convey specific and appropriate information. Not planning for when action steps would be initiated and completed or identifying who is explicitly responsible for action steps might seem like relatively harmless satisficing behavior. The behavior seems to suggest that school principals believe they can resolve these issues later. In reality, our deeper analyses of the plans showed that timelines and
associated action steps simply ended early in a semester. By not investing in crafting detailed timelines and thinking through a progression of action steps to meet a goal, considerable opportunities to build and improve were lost. Without the establishment of additional explicit ways forward, potential improvements may have in fact receded as weeks and months passed.

In part, reconceptualizing SIP priorities starts with the framing of expectations. Many state education agencies provide templates for school principals to develop and submit plans (Fernandez, 2011). We question whether such templates are in the best interest of school principals – particularly those in low-performing schools – and advance or enhance their ability to develop quality SIPs. Our concern is less about the use of templates because guiding mechanisms are important, but the purpose of template development should be about the end user (Mintrop, 2016). Instead, state education agency templates often ask for data and information that are important for the review process, but perhaps not individual schools. The perpetuation of such a mindset results in the learned behavior on display in the 90-day SIPs we analyzed. Programmatically, these SIPs were supposed to provide school principals with opportunities to make mid-year adjustments and engage in authentic school improvement planning in a low-stakes setting. Few, however, appeared to fully engage – and some school principal behaviors, such as resubmitting the same SIP, suggest an unawareness of or indifference to the opportunity to authentically engage in the process.

As mentioned above, the approval of satisficing school principal behavior by district leadership and USTP personnel also suggests the need for a “reset” at other levels within the education system. There are many questions beyond the scope of this study worth further consideration. Do district leaders (e.g. school principal supervisors) read the SIPs? Evaluate them? Compare them to previous SIPs or other SIPs in the district? To what extent do district leaders know what good SIPs look like or what they should include? And perhaps most directly related to this study, to what extent or in what ways do district leaders themselves engage in satisficing behavior?

If the development of SIPs is a critical aspect of leading low-performing schools, but school principals engage in satisficing behavior when developing SIPs, for what other critical aspects of leadership do school principals satisfice? Leveraging satisficing behavior as a conceptual framework seems like a fruitful way to extend the research conducted here to other aspects of school and school systems leadership. The time that school principals have to engage in all of their responsibilities is woefully limited, so satisficing behavior is not surprising. Thus, the extent to which satisficing behavior has been studied and understood – including its influence on leadership development, organizational improvement and student learning – is critical to developing more appropriately responsive expectations for school improvement.

The results of this study also point out how little we know about school improvement planning processes in general. Despite a recent uptick in research on SIPs (e.g. Caputo and Rastelli, 2014; Huber and Conway, 2015; Strunk et al., 2016; VanGronigen and Meyers, in press), there is a worldwide dearth of research on plan development and quality, plan enactment and plan relationship to organizational and academic outcomes. Instead, well-known scholars (e.g. Bryk et al., 2015; Mintrop, 2016) developed thoughtful models on planning could be better, but the specific educational leadership research evidence behind those models remains sparse (VanGronigen and Meyers, in press). However, they and this study point to a similar notion that requires further attention: How do we know when school principals and leadership teams are providing their best planning effort and simply need more professional development or capacity vs having capacity, but not providing their best planning effort?

We stated earlier that an assumption in our theoretical approach to this study is that satisficing behavior is indicative of inauthentic school principal investment. We know of no research on important related issues. For example, to what extent are school principals and other educational leaders prepared to develop compelling improvement plans? To what extent do they engage in authentic planning processes? In what ways do bureaucratic
structures, especially for leaders of low-performing schools, inhibit their ability to engage in authentic plan development? What roles do and should district leaders play in plan development? And how do all of these and other factors enhance or limit the actual enactment of plans (Strunk et al., 2016)? The amount of research to date conducted on SIPs seems unreflective of the emphasis given to the topic by government policies, especially those focused on accountability in the USA or elsewhere.

References


Further reading


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Distributed leadership and the Malaysia Education Blueprint
From prescription to partial school-based enactment in a highly centralised context

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Abstract
Purpose – The purpose of this paper is to present and discuss the findings from research on the relationship between leadership theory and policy reform in Malaysia. Distributed leadership is normatively preferred in the Malaysia Education Blueprint (MEB), the country’s major policy reform document. The research was conducted in two dissimilar Malaysian states (Selangor and Sarawak).
Design/methodology/approach – The research was a multiple case-study design, with 14 schools (seven in each state). Sampling was purposive, with schools selected from the different bands used to categorise school performance in Malaysia. Within each school, interviews were conducted with principals (secondary schools), headteachers (primary schools) and a range of teachers, middle leaders and senior leaders, to achieve respondent triangulation.
Findings – The findings confirm that the MEB prescribes distributed leadership as part of a strategy to move principals and head teachers away from their traditional administrative leadership styles. While there were some variations, most schools adopted a modified distributed leadership approach. Instead of the emergent model discussed and advocated in the literature, these schools embraced an allocative model, with principals sharing responsibilities with senior leaders in a manner that was often indistinguishable from delegation.
Research limitations/implications – A significant implication of the research is that policy prescriptions in major reform initiatives can lead to unintended consequences when applied in different cultural contexts. While distributed leadership is presented as “emergent” in the international (mostly western) literature, it has been captured and adapted for use in this highly centralised context, where structures and culture assume a top-down model of leadership. As a result, distributed leadership has taken on a different meaning, to fit the dominant culture.
Practical implications – The main practical implication is that principals and head teachers are more likely to enact leadership in ways which are congruent with their cultural backgrounds and assumptions than to embrace policy prescriptions, even when unproblematic adoption of policy might be expected, as in this centralised context.
Social implications – The main social implications are that policy change is dependent on socio-cultural considerations and that reform will not be whole-hearted and secure if it is not congruent with the values of institutions such as schools, and the wider society which they serve.
Originality/value – The paper is significant in exploring a popular leadership model in an unfamiliar context. Beyond its importance in Malaysia, it has wider resonance for other centralised systems which have also shown interest in distributed leadership but have been unable and/or unwilling to embrace it in the ways assumed in the literature. This leads to theoretical significance because it adds to the limited body of literature which shows that allocative distributed leadership has emerged as a device for accommodating this model within centralised contexts.
Keywords Malaysia, Distributed leadership, Centralization, Educational reform
Paper type Research paper

Introduction
Many countries are seeking to improve their education systems in order to enhance their competitiveness in an increasingly global economy. Referring to Asia’s tiger economies, Hallinger (2004, p. 63) argues that “global economic competition has raised the stakes for educational attainment, individually and collectively. Consumers now define the meaning of
quality education globally, rather than locally or nationally”. The growing importance of international comparisons of student learning outcomes, notably the Programme for International Student Assessment (PISA), increases the visibility of different levels of performance and often informs national reform initiatives.

Many countries use international comparisons, such as PISA, as levers to evaluate their own education against other systems. Malaysia is one such country and its educational reform agenda is informed by the PISA scores. The Malaysia Education Blueprint (MEB) (Ministry of Education, 2013) is the major policy document driving reform. It is explicit about benchmarking Malaysian student performance against international norms. According to Ministry of Education (2013, E6), ‘other systems are improving student performance more rapidly, and have found ways to sustain that momentum. The gap between Malaysia’s system and these others is therefore growing. However, Hallinger (2010, p. 409) cautions against policy borrowing when seeking school improvement. Some “education reforms have travelled around the globe far from their points of origin and often appear ‘foreign’ upon arrival in South-East Asia”.

The MEB outlines an ambitious vision to raise Malaysia’s learning outcomes from their current position in the bottom quartile of PISA scores in reading, mathematics and science:

All children will have the opportunity to attain an excellent education that is uniquely Malaysian and comparable to the best international systems. The aspiration is for Malaysia to be in the top third of countries in terms of performance in international assessments, as measured by outcomes in [...] PISA, within 15 years. (Ministry of Education, 2013, E-14).

The blueprint identifies eleven “shifts” to achieve this vision. Shift five focuses on school leadership and aims to “ensure high performing school leaders in every school” (Ministry of Education, 2013, E-20). It notes that the quality of school leaders is the second biggest school-based factor in determining school outcomes (Ministry of Education, 2013, E-27), echoing international research findings (e.g. Leithwood et al., 2006).

Shift five foreshadows three significant leadership policy changes. First, all new principals will be required to complete the National Professional Qualification for Educational Leaders (NPQEL), a major step towards professionalising school leadership. Second, they will receive induction and support from an experienced principal or a school improvement partner (SIP). Third, principals who consistently underperform will be redeployed to a teaching position in another school (Ministry of Education, 2013, E27-28).

The Blueprint claims that “the aspiration is to create a peer-led culture of professional excellence wherein school leaders mentor and train one another, develop and disseminate best practices and hold their peers accountable for meeting professional standards” (Ministry of Education, 2013, E28).

The Blueprint also stresses that principals should not focus on administrative leadership (Ministry of Education, 2013, E-27) and intends that future leaders will lead in a different way. However, this is challenging to achieve as administrative leadership is the norm in highly centralised systems such as Malaysia, for example in neighbouring Thailand (Hallinger and Lee, 2014). “Despite new system expectations […], the predominant orientation of Thai principals remains largely unchanged” (Hallinger and Lee, 2014, p. 6).

The Blueprint makes several references to the significance of distributed leadership in achieving the Ministry’s aims, stating that “in line with international best practices, the Ministry will move towards a model of distributed leadership where effective, high-quality school leadership permeates the entire organisation of all schools” (MEB, 2013, p. 18). However, this model, and most of contemporary leadership theory, was developed and honed in Western contexts, raising questions about its suitability for Asian contexts, including Malaysia, where education systems are highly centralised (Walker and Hallinger, 2015). This prompted the authors to conduct research on whether, to what extent, and in what ways, distributed leadership is practiced in Malaysian schools.
Distributed leadership: an outline literature review

The study began with a systematic review of the literature, in English and Bahasa Malaysia, using the search terms distributed, shared and teacher leadership (Bush et al., 2018). The inclusion of Bahasa Malaysia sources helps to address a fundamental weakness in much of the current literature; an almost total reliance on English language sources. Hallinger and Chen (2015, p. 21) note the problem of “a hidden literature” with “a substantial number of research papers […] written in indigenous languages”. These sources are often ignored in systematic reviews, so their inclusion here provides a more robust starting point for the review of previous research on distributed leadership.

Leadership theory

There are numerous leadership theories, which seek to explain the behaviours and actions of school leaders. Yukl (2002, p. 4) argues that “the definition of leadership is arbitrary and very subjective”, but the following “working definition” includes its main features:

Leadership is a process of influence leading to the achievement of desired purposes. Successful leaders develop a vision for their schools based on their personal and professional values. They articulate this vision at every opportunity and influence their staff and other stakeholders to share the vision. The philosophy, structures and activities of the school are geared towards the achievement of this shared vision. (Bush and Glover, 2003, p. 5)

Theory is valuable and significant if it serves to explain practice and provide leaders with a guide to action. Theories are most useful for influencing practice when they suggest new ways in which events and situations can be perceived (Bush, 2011). This paper tests the application of leadership theory in the specific context of Malaysia.

Some of the most prominent leadership models are managerial, transformational, distributed and instructional leadership. These theories are mostly normative, with their advocates stressing their utility as the “best” way to lead and manage schools (Bush and Glover, 2014; Leithwood et al., 1999).

Distributed leadership has become the most fashionable leadership model in the twenty-first century, with numerous books and journal articles focusing on this theme (Bush, 2019; Harris, 2010). It provides the theoretical framework for the study because of its current popularity and because it is advocated in the Blueprint (see above). The rationale for this model is that leadership is too complex to be handled purely through solo leadership. By increasing leadership density, through empowering more leaders, there is potential for enhanced learning outcomes (Bush and Glover, 2014).

Distributed leadership is one of several models which stress shared approaches to leadership (Crawford, 2012). Collegial and participative leadership were popular shared approaches in the late 1900s but distributed leadership has become the normatively preferred leadership model in the twenty-first century. Gronn (2010, p. 70) states that “there has been an accelerating amount of scholarly and practitioner attention accorded
[to] the phenomenon of distributed leadership”. Harris (2010, p. 55) adds that it “represents one of the most influential ideas to emerge in the field of educational leadership in the past decade”.

Understanding distributed leadership
An important starting point for understanding distributed leadership is to uncouple it from positional authority. As Harris (2004, p. 13) indicates, “distributed leadership concentrates on engaging expertise wherever it exists within the organization rather than seeking this only through formal position or role”. Harris (2010, pp. 55-56) defines it as:

The expansion of leadership roles in schools, beyond those in formal leadership or administrative posts […] [it] concentrates on the interactions rather than the actions of leaders.

Gronn (2010, p. 70) refers to a normative switch “from heroics to distribution” but also cautions against a view that distributed leadership necessarily means any reduction in the scope of the principal’s role. Indeed, Hartley (2010, p. 27) argues that “its popularity may be pragmatic: to ease the burden of overworked headteachers”. Lumby (2009, p. 320) adds that distributed leadership “does not imply that school staff are necessarily enacting leadership any differently” to the time “when heroic, individual leadership was the focus of attention”.

Bennett et al. (2003, p. 3) claim that distributed leadership is an emergent property of a group or network of individuals in which group members pool their expertise. Harris (2004, p. 19) referring to an English study of ten English schools facing challenging circumstances (Harris and Chapman, 2002), says that there should be “redistribution of power”, not simply a process of “delegated headship”. However, Hopkins and Jackson (2002) argue that formal leaders need to orchestrate and nurture the space for distributed leadership to occur, suggesting that it would be difficult to achieve without the active support of school principals. Heads and principals retain much of the formal authority in schools, leading Hartley (2010, p. 82) to conclude that “distributed leadership resides uneasily within the formal bureaucracy of schools”. Bottery (2004, p. 21) asks how distribution is to be achieved “if those in formal positions do not wish to have their power redistributed in this way?” Harris (2005, p. 167) argues that “distributed and hierarchical forms of leadership are not incompatible” but it is evident that distribution can work successfully only if formal leaders allow it to take root. In their meta-analysis of distributed leadership, Tian et al. (2016, p. 153) add that, “in a distributed leadership setting, formal leaders should also be regarded as important ‘gate keepers’, who either encourage or discourage others from leading and participating in organisational changes”. Gronn’s (2010, p. 74) overview of four research projects leads him to conclude that principals retain considerable power. “Certain individuals, while they by no means monopolised the totality of the leadership, nonetheless exercised disproportionate influence compared to their individual peers”. Harris (2005, p. 167) argues that “distributed and hierarchical forms of leadership are not incompatible” but it is evident that distribution can work successfully only if formal leaders allow it to take root. Gunter et al. (2013, p. 563) argue that “normative work tends to present the idea of distributed leadership as an imperative for practitioners as school improvers” and adds that the “lack of substantial and robust data can make exhortations to adopt distributed leadership problematic” (Gunter et al., p. 565).

Distributed leadership and student outcomes
The interest in, and support for, distributed leadership is predicated on the assumption that it will bring about beneficial effects that would not occur with singular leadership.
Leithwood et al.'s (2006, p. 12) important English study shows that multiple leadership is much more effective than solo approaches:

Total leadership accounted for a quite significant 27 per cent variation in student achievement across schools. This is a much higher proportion of explained variation (two to three times higher) than is typically reported in studies of individual headteacher effects.

Leithwood et al. (2006, p. 13) add that schools with the highest levels of student achievement attributed this to relatively high levels of influence from all sources of leadership. Distributed leadership features in two of their widely cited “seven strong claims” about successful school leadership. Hallinger and Heck (2010) also found that distributed leadership was significantly related to change in academic capacity and, thus, to growth in student learning.

**Limitations of distributed leadership**

As suggested earlier, the existing authority structure in schools and colleges provides a potential barrier to the successful introduction and implementation of distributed leadership. “There are inherent threats to status and the status quo in all that distributed leadership implies” (Harris, 2004, p. 20). Fitzgerald and Gunter (2008) refer to the residual significance of authority and hierarchy.

As noted earlier, the Blueprint (Ministry of Education, 2013, E28) suggests a shift towards distributed leadership. “The aspiration is to create a peer-led culture of professional excellence wherein school leaders mentor and train one another, develop and disseminate best practice, and hold their peers accountable for meeting professional standards”.

**Previous research on distributed leadership in Malaysia**

Perhaps because Malaysia has a highly centralised system, there is only limited research on distributed leadership in this context. Jones et al.’s (2015) study of principals’ leadership practices in Malaysia provides evidence of principals’ transformational and distributed practices attributed to their emerging accountability for school outcomes. They conclude that secondary school principals are “increasingly seeing themselves as leaders who are responsible for change and empowering others” (Jones et al., 2015, p. 362).

Abdul Halim’s (2015) correlational study, involving 831 teachers in 17 residential and national secondary schools, found a significant positive relationship between distributed leadership and teachers’ self-efficacy. The author reports that teachers’ self-efficacy is relatively high in residential schools compared to national secondary schools. Boon and Tahir’s (2013) survey of 600 senior and middle leaders in Johor involved three questionnaires on distributed readiness, work stress and organisation commitment. By using structural equation modelling, they found positive relationships between the dimensions of leadership, work stress and work commitment among middle managers.

Fook and Sidhu’s (2009, p. 111) research showed evidence of “distributing leadership […] through the development of macro and micro management teams” to contribute to the management of change. Rabindarang et al.’s (2014) explanatory mixed methods study included a questionnaire, completed by 359 teachers and interviews with four teachers. Their study established that distributed leadership reduces job stress among teachers in technical and vocational schools.

Abdullah et al. (2012) studied distributed leadership in a daily premier school in Selangor. They identified three elements of distributed leadership: sharing the school’s goal, mission and vision, school culture (cooperative, collaboration and professional learning community), and sharing responsibilities. Zakaria and Abdul Kadir (2013) studied the practice of distributed leadership among teachers in a city in north Malaysia, based on demographic factors using the Distributed Leadership Inventory developed by Hulpia et al. (2009). The findings showed that distributed leadership was only moderately practiced by the teachers.
in the city, for example, in respect of participative decision making, cooperation within the leadership team and leadership supervision. Norwawi’s (2017) research on leadership in high performing schools showed evidence of distributed leadership but this appears to be “allocative” (Bolden et al., 2009) rather than “emergent” (Bennett et al., 2003), with principals delegating tasks to their senior and middle leaders rather than empowering them to act independently.

This limited body of literature shows some evidence of the existence of distributed leadership in some Malaysian schools, for example through teamwork. It appears to have enhanced teacher self-efficacy and reduced teacher stress. Perhaps as a consequence, teachers feel empowered and may enhance their commitment. However, despite its normative emphasis in the Blueprint, the literature suggests two cautions. First, distributed leadership may be practiced only moderately. Second, the model appears to be allocative, consistent with the hierarchy, rather than emergent. More work is required to establish whether and how distributed approaches can be meaningful in this hierarchical context. The present research contributes to this knowledge “gap”.

Teacher leadership is often aligned with distributed leadership as distribution often involves classroom teachers (Bush and Glover, 2014). Although teacher empowerment has been considered as an integral element of the attempt to move towards decentralisation from a highly centralised education system (Lee 1999), there is limited evidence within Malaysia (but see Jones et al., 2015). The Blueprint stresses the need to enhance “attractive” pathways into leadership for teachers. This might include becoming subject specialists, focusing on developing curriculum and assessment.

Another dimension of teacher leadership highlighted in the Blueprint is that of master teachers. Lee (1999, p. 93) highlights the emergence of “master teachers” in Malaysia, whose role was mainly targeted to “pedagogical guidance to their own colleagues”. Bush et al.’s (2016) study of master teachers in Malaysia and the Philippines, drawing on interviews with master teachers, principals and teachers, show that they occupy the hinterland between formal and informal teacher leadership. In both countries, their work is legitimised by their appointment to an established position with enhanced salary and status. They conclude that “the advent of master teachers in both countries has succeeded in keeping talented and ambitious teachers in their classrooms but their leadership role is patchy and depends on personal variables rather than school or system endorsement” (Bush et al., 2016, p. 37). They also note that the development of teacher leadership has been limited because of the emphasis on the formal hierarchy.

Ngang’s (2012) research on teacher leadership in special education classrooms in China and Malaysia reveals that teacher leadership is evident in classroom management in both countries. The Malaysian evidence arises from a survey of 369 special education teachers in Peninsular Malaysia. The paper suggests the provision of training for teacher leadership and capacity building. The role of teachers in building capacity within schools has attracted attention and Harris et al. (2013, p. 217) argue that:

In Malaysia, which aspires to be high performing, the Education Blueprint [...] is the clearest signal yet that collaborative professional learning is viewed as a potential strategy for securing educational improvement and change. It reinforces collective professional learning as a means of transforming education quality and performance.

Park and Ham’s (2016) quantitative study of three countries, Australia, Malaysia and South Korea, found that an increased level of effective interaction between principals and teachers leads to consolidation of trust, and enhanced teacher collaboration. The Ministry of Education (2013) also discusses the pathway to teacher leadership. However, the limited Malaysian research on teacher leadership tends to align it with formal roles, such as master teacher. This seems to limit the scope for “emergent” teacher leadership, arising from personal initiative.
Distributed leadership appears to be allocative, consistent with the hierarchy, rather than emergent. Distributed leadership also appears to have enhanced teacher self-efficacy and reduced teacher stress. Perhaps as a consequence, teachers feel empowered and may enhance their commitment.

The review suggests a gap between distributed leadership theory, developed in western contexts with high degrees of decentralisation and leadership practice in centralised contexts such as Malaysia, where teachers feel constrained by the hierarchy. These insights provided the starting point for the authors’ research on distributed leadership in 14 schools.

**Research methods**

This paper reports the authors’ study of the application of school leadership theory in selected schools in two Malaysian provinces, Selangor and Sarawak, funded by the Ministry of Education. The purpose of the study was to examine the nature and extent of distributed leadership in selected Malaysian schools, in order to assess whether, how and to what extent, the ministry’s advocacy of this model was borne out in practice. This led to the following research questions:

- **RQ1.** What leadership theories are manifested in Malaysian schools?
- **RQ2.** How, and to what extent, is distributed leadership practised in Malaysian schools?
- **RQ3.** What is the relationship between distributed leadership and student outcomes in Malaysia?
- **RQ4.** What combination of leadership practices is most effective in facilitating school improvement?

The main focus of this paper is **RQ2**.

Following a sequential research design, the first phase of the research involved case studies of seven contrasting schools in Selangor, the political and economic heart of Malaysia. The second phase featured case studies of seven contrasting schools in Sarawak, an island state remote from the Malaysian peninsula. The research is a multiple case study design. Bassey (2012, p. 156) describes case study as “an empirical enquiry which is conducted within a localised boundary of space and time”.

Malaysian schools are stratified into seven “bands”, according to Ministry of Education criteria about school effectiveness and achievement, with the most successful schools in band one and the least successful in band seven. The intention was to adopt a stratified sampling frame, with one school from each band in both states. This stratification was intended to establish whether distributed leadership was more prominent in those schools labelled as more effective through the banding process. In practice, it was not possible to include schools from all seven bands. In Selangor, all seven schools were in Bands 2, 3 or 4. The sample included one urban and three rural primary schools, as well as one rural and two urban secondary schools. In Sarawak, the seven schools ranged from Band 1–5. The sample included one rural and two urban primary schools, as well as four urban secondary schools.

The researchers scrutinised school documents and conducted several interviews in each school. The intention was to interview the principal (secondary schools), headteacher (primary schools), senior leaders and middle leaders, to build a picture of the extent, nature and pattern of distribution in each school. Access was secured through the Ministry of Education’s Planning and Research Division. This facilitated access to the 14 schools and the intended participants were asked for their voluntary informed consent to take part in the research. Most readily agreed to participate but a few declined to do so. As a consequence, participant sampling differs, to some extent, across the 14 schools. In total, 95 interviews were conducted, 51 in Selangor and 44 in Sarawak. Interviews typically lasted between 45
Principals were asked questions about their knowledge of the MEB, especially Shift Five, Leadership, whether or not their leadership practices have changed since the Blueprint was published in 2013, and whether or not they regard themselves as distributed leaders, with probes about how, and to whom, leadership is distributed. The other participants were asked about their own leadership practices and also questioned about whether or not they regard their principals as distributed leaders, with probes about how, and to whom, leadership is distributed. The findings offer a triangulated perspective on the extent and nature of leadership distribution in the case-study schools. The participants also responded to questions about instructional and transformational leadership but these dimensions are beyond the scope of this paper.

The data were analysed sequentially. First, a case study report was prepared for each school, integrating the data from all participants to build a picture of distributed leadership specific to each context. The findings were organised thematically, with most themes linked to the research questions. Second, the seven cases in each state were compared, leading to an overview of distributed leadership in these very different contexts. Third, the findings from each state were compared to build an overall picture of the nature of distribution in these 14 Malaysian schools.

Findings
Distributed leadership features prominently in the MEB, although its focus is almost exclusively on distribution to official leaders, such as senior assistants, heads of department and subject leaders. This is a different interpretation from most of the established (mainly western) literature which stresses that distribution is emergent rather than being linked to the hierarchy, although this may be largely a normative view, even in the west.

Participants at all 14 case-study schools were able to identify aspects of distribution but most of their examples relate to collaborative activity, broadly defined, rather than distributed leadership. The thematic discussion below shows the different interpretations offered by the participants. The six themes are constructs, which emerged from the data, and may be regarded as distinctive features of distributed leadership in Malaysia:

1. Delegation;
2. Sharing the workload;
3. Decision making;
4. Trust;
5. Consultation; and
6. Autonomy.

Delegation
The prominence of allocative distribution is shown in the emphasis on delegation, explicit in five schools; E, F, one, two, and seven and implicit in several others, for example in school six, where senior leaders are free to make co-curricular decisions. Delegation is a management concept, a device for allotting tasks and responsibilities. It aligns strongly with allocative leadership and may be regarded as consistent with leaders' and followers' expectations in a hierarchical system. Delegation is usually portrayed as a linear and vertical process, with a superordinate allotting tasks to a more junior colleague, implying an organisational hierarchy (Connolly et al., 2019).

The head teacher of school E believed that he should know everything that is going on in the school and he practised delegation in a manner that suggests controlled freedom.
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Table 1. Participants (Selangor schools 1-7, Sarawak schools A-G)

Distributed leadership and the MEB
Initial planning had to be done in consultation with the head teacher. When plans were adapted to incorporate the head teacher’s ideas and suggestions, the teachers were allowed to implement the plans or programmes. Staff acceptance of this stance is illustrated by the comments of the senior assistant (academic):

> We can make decisions but, of course, we refer to him […] we still have a leader and, of course, the leader should have control in the institution. He will and should have the last say.

This view is confirmed by a senior teacher. “He is not autocratic. But still in control”.

Delegation to the senior assistants in school F was facilitated by the layout of the administrative block, with the principal’s office at the end of the corridor. The general administrative office, and the four senior assistants’ offices, was towards the front of the corridor, meaning that visitors had to go past all these various offices before reaching the principal’s office. This facilitated the senior assistants handling most issues with students, teachers and parents:

> If […] parents have anything [to discuss] they settle there and then [and] sometimes they just go back. So, we do a lot of distribution of power for the senior assistants.

School one also appears to operate an allocative model, with the principal “passing down authority” to senior teachers, for example for discipline and to “control the children”, especially if he is out of the school. The senior assistant (academic) says that the level of distribution depends on the type of decision but we “have to report to him” and such decisions are “guided”.

Delegation in school two is primarily to senior positional leaders; “he will distribute based on our post” (senior assistant, academic). The assistant principal (student affairs) adds that “the principal will delegate all academic matters to the assistant principal, academic, to ensure that all programmes run smoothly […] Anything about students, he will delegate to me”. The HOD (languages) confirms that “he [the principal] will follow the hierarchy”.

At school seven, the niche area coordinator thinks that the principal distributes power but in the form of “delegating tasks”. “I think she gives us a lot of leeway […] a lot of freedom”. However, she still needs to report to the principal.

**Sharing the workload**

A strong motivation for delegation is the need to share the workload, with recognition that the expectations of stakeholders, notably education officials at every level, cannot be met by the principal alone. This was evident at five of the case study schools. The head teacher of school A epitomised this view, stressing the need to work with teachers and the community; “I cannot work alone”. The head teacher of school B was also aware that she could not do all the work herself and that she needed others to help:

> I have only two hands, I cannot manage so many things and then I need people to do the things and then, if they have good ideas, why not let them do it?

The need to share the work is particularly evident in larger schools. The principal of school D, for example, was aware that he could not run the school alone and needed the help of all teachers, especially senior and middle leaders:

> I need those senior teachers and senior assistants to observe them (teachers) and coach them. The same goes to students, because we have more than 2000 students, there is no way I could do it alone by myself […] We have form teachers, my counsellors, they are my eyes and arms of the law […] they are the ones who talk to the students and help the students.

The principal of school F also stated that his school is too big and that he needed several teachers to manage the school with him. Similarly, the principal of school seven claimed that “you must have a team, you cannot want to work by yourself”.


Decision making

The nature of the decision-making process provides important clues about the extent of distributed leadership in schools. Where this is tightly controlled by the principal, opportunities for teacher initiative are likely to be limited. This was illustrated at school one, where decisions were “guided” by the principal, and at school four, where decision making was subject to “controls.” In contrast, where teachers are able to exercise agency, within only broad accountability parameters, distributed leadership should be able to thrive. While control was strongly evident in the case-study schools, there were a few examples of teacher initiative being encouraged.

The teachers of school B indicated that they were very much involved in decision making related to their subjects. Although important decisions were made by the head teacher, teachers were allowed to make decisions in their zones of expertise. “Sometimes they need my decision. Sometimes they make their decisions too” (head teacher). This notion of decision-making zones provides a helpful way of understanding the scope for distributed leadership.

The principal of school D regarded distributed leadership as a way of developing his staff:

I told them (teachers) that I would like to build them up, if they can make decisions, that’s good, but any major decision they want to make, it’s good also if they discuss with […] the senior management team because I don’t want to be the only person here as the leader. I told them that I like to see parallel leadership because this is a big school.

However, the senior assistant (student affairs) was less confident about making independent decisions. He felt that, in matters pertaining to student welfare and discipline, it would be wise to follow rules and to consult the principal, who should make the final decision, although he could discuss matters with him:

I handle students’ cases so I want everything to follow school rules and the circular. So, normally I will not make the final decision but I will try to give some suggestions or my opinions and then I will discuss with the principal and he will come to the final decision.

This example shows that distribution may be constrained by followers being ultra-cautious about exercising leadership, as well as by principal reluctance to share power.

The principal of school F distributed many leadership issues to his two senior assistants, academic, and student affairs. Usually, the teachers would liaise with the appropriate senior assistant, for academic or student-related issues. Matters would be resolved at that level and reported to the principal during the weekly meetings. Only serious issues were referred directly to the principal. The senior assistants were given autonomy to decide on matters at their respective levels. The principal believed in giving them “space”:

I give the teachers space to work. They have freedom to work and, when they have space, they work on their own. I believe they work honestly.

This was attested by all the teachers who were interviewed. They felt it easy to work when the principal trusted them. They were not worried about whether what they were doing was right or wrong as they were given the space to do what they thought appropriate for their own students.

The principal of school F was a firm believer in internal promotion. He preferred middle leader posts be filled by teachers from the same school, because they knew the culture of the school and how things were done. He would personally train them for leadership posts. There were weekly meetings with the senior leadership team members so that the principal would be briefed about what was happening in the various departments.

The school F example suggests that distribution is more likely to take root where principals have confidence in their colleagues. By encouraging internal promotion, principals are able to allow distribution, knowing that decisions are likely to be consistent with their values and priorities.
Trust is a key dimension if distributed leadership is to thrive. Senior leaders need to be confident that decisions are consistent with their values, and with school policies, as in the school F example discussed above. Teachers also need to feel confident to enact leadership without fear of negative consequences. In hierarchical systems, such as Malaysia, it is possible that risk-averse teachers may seek approval for their ideas even when this is not a requirement.

Participants at five schools discussed trust as a dimension of distributed leadership. School A has many experienced teachers and the head teacher trusted them to carry out their duties without having to monitor them. The work-focused culture of the school encouraged the development of mutual trust. Leadership is distributed, especially to senior teachers, who are often consulted by the head teacher. It is unsurprising that trust in senior leaders is greater than in the wider body of teachers.

School D is a two-session school, with an afternoon supervisor. The principal of school D stayed in the school until 6 p.m. on most days but he did not interfere with the afternoon supervisor. He trusted him but stayed until 6 p.m. to show his support:

I told parents that [...] the afternoon supervisor is the principal in the afternoon, you go and see him [...] I want him to be in-charge in the afternoon, I stay back until 6 p.m. plus to show I am behind him, but I want him to feel that he can deliver also. (Principal)

The principal of school F trusts his teachers and, for example, he allowed them to organise their own professional development programmes. However, he expected the teachers to provide a report of their activities every six months.

At school six, the senior assistant for student affairs implies a distributed approach in saying that the head gives her “a lot of opportunities” to make decisions, and attributes this to the trust the head has in her. Three other participants also refer to the “freedom” to develop and implement programmes, but not if they have financial implications.

Trust is also a feature of leadership at school four. The HoD (Languages) stresses that “trust is important because [...] we have to work together as a team”. The principal provides opportunities for teachers to make decisions and she seeks advice from senior assistants and committees. However, this may be understood as consultation rather than distribution. “She [the principal] will consult with the teachers on everything. Once she has given her consent, then I will make the decision” [but] “there are controls” (senior teacher).

Consultation
As noted above (school four), some participants referred to consultation when asked about distributed leadership. This is a weaker form of collaborative activity, because advice can be ignored or rejected and final decisions are taken by the principal. Several staff at school three refer to the head seeking their opinions but, as one teacher notes, “there’s discussion, but we always follow her (the principal’s) decision [...] in the end, it’s always her decision”.

Similarly, at school five, the senior assistant (co-curriculum) notes that the head allows the teachers to plan as a group, rather than taking all the decisions herself. A class teacher says that the leadership is willing to listen to teachers but this is consultation not distribution.

Autonomy
Autonomy is an important requirement for distributed leadership to thrive (Javadi et al., 2017). Teachers need a degree of agency to initiate and enact new ideas. As professionals, they have specialist knowledge and skills but they also require the confidence and encouragement to act autonomously, and to understand how their autonomy may be constrained. Autonomy for teachers, and especially for senior leaders, was evident at six of the case study schools, although it was constrained at four of them.
Senior leaders at school A have a degree of autonomy, as indicated by the senior assistant (academic):

If I can handle it, I will handle it. I don’t push everything to the head teacher. She has given me the empowerment but I will inform her after I have solved the situation. If the problem is big, then I will meet the teacher with the head teacher.

The principal of school F did not dictate and teachers were given the autonomy to decide what they should do. The teachers were encouraged to meet him often to discuss their plans and ideas. Because of the large size of school F (more than 2,000 students), the senior assistants were given a lot of authority to carry out their tasks. They, in turn, gave discretion to their teachers. There are many committees (including those for timetables, textbooks, subjects and exams). Work was distributed to the various committees, which were allowed to make decisions. However, they needed to report to the senior assistant who, in turn, had to report to the principal.

The school F principal appeared to offer opportunities for teachers to initiate ideas and to work on their own projects, a form of teacher leadership. The principal did not micro-manage their work, believing that, by giving them space and trust, the teachers would flourish professionally and personally. This led to a degree of autonomy, with teachers feeling free to do what they think best for their subjects and for their students.

The principal of school C wanted to know everything that was going on in the school, and this meant only modest autonomy for teachers and other leaders. This was to make sure that she was on top of everything and not caught by surprise if things went wrong. The senior assistant (academic) acknowledges the limited nature of autonomy, even for senior leaders:

I don’t make a lot of suggestions but when I do she listens but I need to consult her first because she’s the head of the school. Whatever happens later or when people call, she knows. It is easier for us that way. (SA Form 6)

The teachers at school G mentioned that autonomy is granted to teachers, for example to conduct extra classes for the weaker students. The principal left it to individual teachers to plan the classes and to identify the students to attend such classes. This may be seen as an example of bounded autonomy within a hierarchy.

Another example of bounded autonomy was evident at school seven. One middle manager claimed that the principal “gives us a lot of leeway” but she still needs to report to the principal. Similarly, at school one, the principal gives teachers the opportunity to make new policies but, in practice, “we normally consult the senior assistant first”.

Discussion and conclusion
The Ministry of Education (2013) documents an ambitious attempt to transform the schools’ system so that it is among the best in the world, for example, in respect of PISA scores. One key dimension of this reform relates to school leadership. The Ministry of Education is exhorting principals and other leaders to move away from administrative leadership and to adopt distributed approaches. There is evidence of the beneficial effects of distributed leadership in international research and literature (e.g. Leithwood et al., 2006). However, there is much less data to support their efficacy in centralised contexts, including Malaysia.

The global popularity of distributed leadership arises from dissatisfaction with the limitations of solo leadership, linked to the hierarchy. In the international (mostly western) literature, it has been conceptualised as an emergent property, uncoupled from the formal roles of principals and head teachers (Bennett et al., 2003; Bush and Glover, 2014). The focus is on expertise, not positional authority, recognising that schools are professional organisations and that talent and know-how are widespread. However, this perspective may be normative, offering a somewhat romanticised view, rather than reflecting significant
empirical evidence about emergent distribution in western contexts. This model is arguably better suited to devolved education systems, such as those in England, Australia and the USA, than the centralised systems evident in much of Asia, but distribution is often to formal leaders in both types of context, leading Gronn (2010) to propose a hybrid model, combining bureaucratic and distributed approaches.

The advocacy of distributed leadership by the Malaysian Ministry of Education is recognition of its potential to enhance leadership density, and thus, potentially, to contribute to improved student outcomes. However, the Blueprint links distribution to the hierarchy in two ways. First, the focus is firmly on middle and senior leaders holding formal roles in the structure. Second, the scope of distribution is circumscribed; leaders will be prepared to fully utilise the decision-making flexibilities “accorded to them” (MEB: E28) (present authors’ emphasis).

The Blueprint’s cautious approach to distribution is consistent with the notion of allocative distributed leadership (Bolden et al., 2009). This suggests an uneasy compromise between the free-flowing assumptions of distributed leadership theory and the rigid requirements of the hierarchy. There is evidence of allocative distribution, predominantly to senior leaders, in most of the case study schools. The school one leader, for example, only consults his senior assistants, usually through the senior assistant (academic). Whatever decisions are required, they have to go through the senior assistant before going to him. The senior assistant also acts as a “gatekeeper” for teacher access to the head. Similarly, distributed leadership in school two is allocative and based on hierarchy.

Allocative distribution has several similarities to the management concept of delegation (Connolly et al., 2019). The head teacher of school six, for example, delegates tasks to her senior assistants, a form of allocative distribution. They carry out duties as instructed by their head teacher. When asked about distributed leadership, participants in several schools referred to delegation. In school seven, a middle leader mentions “delegating tasks”, a “top-down” process. The evidence from the Malaysian schools is that distributed leadership is almost indistinguishable from delegation, not least because principals remain in control and have firm reporting requirements.

Hartley’s (2010) view that distributed leadership is popular because it eases the burden of overworked head teachers appears valid in the Malaysian context, as shown in schools A, B, D and F, for example. This is very much a pragmatic view and has little to do with teacher empowerment. Where teacher decision making is allowed, or encouraged, it is often limited to specific zones, notably classroom practice or subject leadership, rather than being a whole-school activity.

Trust is an important aspect of distributed leadership and this led to a measure of autonomy in some case-study schools, for example in school F, a very large school in Sarawak. Where principals trust their colleagues to take the “right” decisions, they are more likely to cede autonomy, regarded by Javadi et al. (2017) as a significant requirement for distributed leadership to be meaningful.

The 14 schools (seven in Selangor and seven in Sarawak) operate in different ways, and with various degrees of success, evidenced in part by their school bands (1–5). Despite the centralised education system, there is scope for individual agency, allowing principals to act as distributed leaders, as their personalities and contexts indicate. One common feature, however, is that leadership is still largely interpreted as “headship”, with little focus on the roles and actions of other senior and middle leaders. Despite its references to senior and middle leaders, the main focus of the Blueprint is on school principals and how they should be developed to lead their schools more effectively. Accountability in centralised systems is through the hierarchy and Malaysian principals are civil servants employed by the government and this inevitably limits their scope for individual agency. Their centrality means that they also act as “gatekeepers” (Tian et al., 2016), who can choose to facilitate or inhibit distributed leadership. The evidence from the 14 case study schools is that principals have chosen to use their authority to limit distribution to senior colleagues and to retain
overall control of all major decisions. As Hartley (2010) indicates, distributed leadership does not fit easily within school hierarchies.

Limitations
The research reported in this paper makes an important contribution to understanding the nature of distributed leadership in Malaysia and, more generally, in centralised contexts. However, it has three main limitations. First, it was not possible to achieve the planned stratified sample of two schools (one from each state) from each of the seven bands used to classify Malaysian schools. This limited the prospect of cross-band comparisons. Second, the data are limited to only two Malaysian states. Including all states may have modified the findings. Third, while the 14 schools provide helpful illustrative data, it is not possible to generalise the data to all 10,000 schools.

Implications of the research
The research has implications for policy, practice and theory. The implication for policymakers is that “big picture” announcements, such as advocating distributed leadership through the MEB, may have limited impact at school level, particularly where it contradicts existing cultural assumptions, which privilege hierarchical leadership. For principals, the data indicate that partial enactment of distributed leadership helps in sharing leadership workloads but largely misses the opportunity to develop future leaders. The implication for theory is that the data indicate a need to modify conventional distributed leadership theory, which stresses “emergence”, to recognise that an allocative leadership model (Bolden et al., 2009) may be more appropriate for centralised contexts. Both sub-models serve to enhance greater leadership “density”, thus potentially securing the benefits of multiple leadership identified by Leithwood et al. (2006). However, the Malaysian version of distribution is almost indistinguishable from the management concept of delegation, suggesting that the widely supported notion of distribution has been “captured” to provide a more “acceptable” label for traditional management activities. The belief that leadership may emerge from anywhere in the organisation, a central feature of distributed leadership theory, is discredited by the Malaysian research which shows that it is a property of the hierarchy and subject to control by the principal. Further research is required to establish whether this constrained form of distribution is also evident in other centralised contexts.

References

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Purpose – Although it is assumed that school district governance by districts leaders can impact schools’ capacity to improvement and educational quality, there is little systematic evidence to support this claim. The purpose of this paper is to discuss how governance goals and interventions affect school districts’ social capital.

Design/methodology/approach – The empirical enquiry used quantitative data on district leaders enacting governance as perceived by their school principals. These data were collected among 399 school principals of 23 Dutch school districts in elementary education, using a survey. Social network data on social capital within school districts were collected using a social network survey among educational administrators (i.e. district leaders, central office administrators and school principals). Additionally, examples of the relation between school district social capital and governance at six school districts were described.

Findings – Results suggest that district leaders can promote the organizational social capital of their school districts through focusing on educational goals. In addition, the findings show that they can reinforce their impact by using interventions varying in coercion level, of which offering support to school principals appears to be “a golden button” to make organizational social capital thrive.

Research limitations/implications – Limitations to the study are the generalizability of the findings (they can be questioned because “convenience sampling” was used) and warrant a longitudinal design to examine how organization social capital develops over time.

Originality/value – The study is unique as it addresses the impact district leaders may have on their districts’ social capital by focusing on social network approach in the study of school district governance.

Keywords Mixed methods, Social network analysis, School districts, District governance, District leaders, Organization social capital

Paper type Research paper

1. Introduction
In many educational systems around the world, the responsibility for high-quality elementary education is increasingly placed in the hands of school district leaders (superintendents) at central offices. In the Netherlands, where this study takes place, the final responsibility for student achievement and school improvement has long been in the hands of school principals, and even when a central office was established, its role was mostly restricted to providing support services such as personnel administration, finance and logistics to often regionally organized clusters of schools. In that role, district leadership has long been conceptualized as a political-administrative environment (i.e. Delagardelle, 2008; Hofman et al., 2002).
However, throughout the years, central offices have grown not only in numbers, but also in size and in responsibilities. Nowadays, it is often not the school principal, but the school district leader (and his/her team) at a central office who is ultimately and legally responsible for the district’s quality of education, thereby extending its task to include instructional support for school improvement and increased student achievement (Honig et al., 2010; Hooge and Honingh, 2014). This significant shift in responsibility, from principal to central office, is placing increasing demands on district leaders’ skills to include not only organizational leadership skills, but also a growing focus on instructional leadership (Coburn et al., 2009; Coburn and Russell, 2008; Honig et al., 2010; Rorrer et al., 2009; Spillane and Thompson, 1997). Following this shift, school districts are increasingly studied as governance sites that aim to increase educational effectiveness and school improvement (i.e. Childress et al., 2007; Hofman et al., 2002; Land, 2002; Leithwood and Azah, 2017).

The concept of governance has been widely used in different social science disciplines, such as economics, sociology, political science and public administration. Some scholars define governance as a process of regulating and stimulating “collective action […] to achieve some commonly accepted goals” is emphasized (Torfing et al., 2012, p. 14). Other definitions conceive governance as moving organizations and society “in one direction or another not by controlling (but) rather by agenda-setting, bringing together different layers of society, negotiating, and facilitating” (Denhardt and Denhardt, 2000, p. 5).

Although there is no universal definition of governance, there appears to be a broad international consensus that governance is affiliated with “authority,” “decision-making” and “accountability” (Institute on Governance, 2018). In order for organizations to achieve goals and move toward improvement, governance is enacted by setting direction and using interventions as modes of governance (Kooiman, 2003; McAdams, 2006). In this study, we therefore operationalize school district governance as district leaders focusing on educational goals and using goal-directed interventions to achieve school district goals.

Yet, detailed insights in the paths through which district leaders can contribute to enhancing organizational and student outcomes are limited. It is widely acknowledged that district leaders can affect schools’ educational quality and student achievement (De Witte and Schiltz, 2018), yet, this impact is by no means straightforward (i.e. Honig, 2006; Honig et al., 2010; Leithwood and Azah, 2017; Saatcioglu et al., 2011). Rather, district leaders appear to influence educational practice and outcomes indirectly, as school districts are notably complex organizations in which effects of governance trickle down “through several layers of implementation” (Saatcioglu et al., 2011, p. 2). To better understand how governance takes place, several scholars have recently suggested to analyze districts’ informal organizational structure and the supportive role social relationships (“social capital”) between educational administrators (district leaders, central office administrators, school principals, assistant principals) through which governance may ultimately impact student achievement (Coburn and Russell, 2008; Coburn et al., 2009; Finnigan and Daly, 2010; Honig and Coburn, 2008).

However, what has been hidden from our view is the way in which this social capital may be affected by district leaders enacting governance. Therefore, the research question guiding this paper is:

**RQ1.** To what extent do governance goals and interventions affect school districts’ social capital as assessed by the pattern of social relationships among school administrators?

We will present a quantitative study, building on quantitative and social network data collected in 481 schools in 23 Dutch elementary school districts. We will build on theory on school governance and social capital theory to conceptualize the relationships under study.
2. Theoretical perspective

School district governance

We examine how, to improve school districts, district leaders enacting two modes of governance may stimulate relationships between educational administrators to reinforce the coherence of alignment in the entire school district and work toward school improvement. The first mode is providing a clear direction by focusing on educational goals. Focusing on educational goals is a key factor in effective school district governance (Hooge and Honingh, 2014; Land, 2002; Leithwood and Azah, 2017), as it enables district leaders to act as “sense givers” and to “manage meaning” for active interpretation and enactment to the level of educational practice (i.e., Coburn et al., 2009; Honig and Coburn, 2008). In order to improve the quality of education, district leaders should focus on goals that matter most. In this study, we identify three different educational goals, namely:

1. goals for math and language proficiency (the basic standards, reflective of the minimal requirement as set by the Dutch Inspectorate of Education);
2. goals for teaching and learning processes (i.e., teaching strategies, classroom social climate and academic learning time); and
3. broader learning goals (i.e., student’s social-emotional development, civic education, or personalized learning).

Setting educational goals may stimulate moving (groups of) central office administrators and school principals in a specific direction, and support them to aim at specific educational objectives. Yet, goal setting may be necessary, but not sufficient, condition for effective school district governance (see: McAdams, 2006).

A second mode is the use of goal-directed interventions. Goal-directed interventions can be seen as formal rules and regulations, such as consequences when goals are not being met, but also as forms of support or pressure. Interventions are needed as forms of action to implement goals and give them shape in practice (Kooiman, 2003; Rhodes, 1997). Using goal-directed interventions to move schools toward improvement is often referred to as “steering” or “the process of governing” (Kooiman, 2003). These interventions can vary in coercion-level: from empowerment and support to rewarding, pressure, and penalization (McAdams, 2006; Zehavi, 2012). In this study, we conceptualize three goal-directed interventions that differ in level of coercion:

1. offering support (i.e., providing advice on professional development or the quality of education);
2. exerting pressure (i.e., making clear arrangements with school principals to guarantee the quality of education); and
3. taking special measures/sanctions (i.e., sanctioning and rewarding school principals, based on quality assessment).

Social capital

For governance to affect educational outcomes, district leaders need to build and have access to a web of social relationships between central office administrators and school principals through which district policy can “trickle down” to influence educational practice (Daly and Finnigan, 2011). Yet, at the same time, this web of social relationships may be affected by the governance actions enacted by school district leaders (e.g., exerting pressure or placing a school “under sanction”). To understand how governance may be related to patterns of social relationships, we use social capital theory.
The social capital theory posits that social relationships provide access to resources, such as advice, support and information, which can be exchanged, borrowed and leveraged in order to achieve individual and collective goals (Bourdieu, 1986; Burt, 2000; Putnam, 1993, 2000). Based on the conceptualization of social capital as including both the structure of the relationship networks and the resources that can be assessed through these networks, Nahapiet and Ghoshal (1998) have defined social capital as “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network” (Nahapiet and Ghoshal, 1998, p. 243). By reflecting the valuable sources that exist in social relationships among linked individuals, social capital is equivalent to financial, human or intellectual capital, in which money, manpower or intellectual resources are the valuable assets.

Many scholars have argued that social capital can be an important source for organizational advantage by facilitating the flow of information between individuals and overcoming problems of coordination both within organizations and between organizations (e.g. Adler and Kwon, 2002; Cross and Parker, 2004; Fredette and Bradshaw, 2012; Tsai and Ghoshal, 1998; Walker et al., 1997). Research has shown that social capital can contribute to the performance and innovation of organizations by adding significantly to value creation (Katzenbach and Smith, 1993; Lawler, 1992; Reagans and Zuckerman, 2001; Szulanski, 1996; Tsai and Ghoshal, 1998). Although social capital may promote higher levels of performance, it also may reduce flexible organizational response and limit the introduction and exchange of novel information due to stability of social relationships (Burt, 1992; Hannan and Freeman, 1984). Studies conducted in educational settings have suggested that the pattern of relationships among educators in schools matters for school improvement (Coburn and Russell, 2008; Datnow, 2012; Moolenaar et al., 2010), instructional practice and student achievement (Moolenaar, 2010; Penuel et al., 2012; Pil and Leana, 2009; Yasumoto et al., 2001).

To explore organizational social capital, social networks are often used to assess the structure and the content of relationships among actors within a system (Leana and Pil, 2006; Nahapiet and Ghoshal, 1998). To examine the content that is transferred through the network, a distinction can be made between instrumental (work-related) and expressive (personal, affective) social networks (Finnigan and Daly, 2010, 2012; Ibarra, 1993; Moolenaar et al., 2010). In this study, we focus on both work-related relationships (“From whom do you seek advice”) as well as personal relationships (“With whom do you engage in more personal conversations”) as governance by district leaders may affect both types of relationships.

School district governance and social capital
Although research has shown that focusing on educational goals and using goal-directed interventions by district leaders are effective governance modes (Hooge and Honingh, 2014; Land, 2002; Leithwood and Azah, 2017), little is known about how these modes affect the pattern of social relationships among educational administrators. Since district governance is a knowledge intensive and interpersonal process involving sense making and co-construction (Coburn et al., 2009; Honig and Coburn, 2008; Paavola et al., 2004), “a high frequency of information sharing and exchange among members is likely to improve effectiveness and the collective capability to achieve results” (Saatioglu et al., p. 7). Promoting the flow of resources in the school district at all levels may therefore reinforce the translation of district governance into practice.

Previous research has shown that school leadership has an impact on the web of social relationships in which teachers exchange knowledge and information (März et al., 2018; Moolenaar et al., 2010; Tuytens et al., 2018). Similarly, studies into the role of school districts
in supporting reforms have indicated that district leadership affects social networks of school leaders and the way these leadership networks facilitate or inhibit change efforts (Daly and Finnigan, 2011, 2012). Based on these findings, we argue that the more district leaders enact governance (i.e. focusing on educational goals and using goal-directed interventions), the more educational administrators in the school district will be involved in work-related and personal relationships, thereby strengthening the district’s social capital. By focusing on educational goals that are closely aligned with administrators’ daily practice (such as goals for math and language, or goals that pertain specifically to teaching and learning processes), district leaders will foster interactions among district administrators to discuss these issues. In addition, when district leaders use “soft” interventions, such as offering support to administrators to tackle issues, they may stimulate interactions among administrators to a greater extent than when they use interventions that are stricter, such as taking special measures (sanctioning) or exerting pressure. Moreover, the use of “soft” interventions will even reinforce the impact focusing on goals have on the pattern of social relationships among educational administrators. In contrast, enacting governance by focusing on educational goals may be less effective when district leaders use more strict goal-directed interventions, such as exerting pressure. We, therefore, assume that the relation between focusing on goals and the resulting patterns of social relationships within the school district may be negatively or positively mediated by goal-directed interventions, depending on the type of goal-directed interventions used.

3. Context
Dutch school district leaders are responsible for the districts’ strategic direction and educational quality, providing an accountability structure that addresses the needs of the school districts’ stakeholders and local communities (Hooge and Honingh, 2014; Claassen et al., 2008). District leaders monitor and evaluate school improvement, and support and challenge improvement processes at all levels of the district organization. District leaders hire the school’s managerial staff and make decisions about the school’s management alongside the principals (Center on International Education Benchmarking, 2014). Dutch school districts that run two schools or more[1] are managed by one or two district leaders who are professional managers in the sense that they are qualified for this full-time paid job. They are recruited and appointed by the school district supervisory board (a non-executive board), which acts as their employer. School districts usually have a central office with human resource management, financial and educational administrators.

Compared internationally, Dutch school districts have an unprecedentedly high degree of autonomy: 85 percent of the decisions are taken by school boards and only 15 percent by the central government (OECD, 2012). Autonomy for Dutch school districts concerns the allocation of resources, personnel matters, infrastructure of buildings and curriculum and assessment. There is no standard national curriculum, but all districts must set time allocations and attainment targets. School districts are free to decide on the academic content, methods of teaching and pedagogical approach, as long as the standard achievement goals are reached at the end of elementary school and students are well prepared to pass the nationwide standard final exams.

About one-third of Dutch elementary schools are public schools that are publicly funded. About two-thirds of Dutch elementary schools are independent (i.e. privately run, mostly based on religious, ideological, or educational convictions). Yet, these schools are also publicly funded with equal financial footing to public schools. School districts in the Netherlands are not organized based on geographical criteria or catchment areas, but schools traditionally organize themselves in school districts based on religious, ideological or educational principals. They vary in size: almost half of the school districts in elementary education (47 percent) run only a single school, a third of the school districts (31 percent) run
2 to 10 schools, and a fifth of the school districts (22 percent) run more than 10 schools, with the largest school district governing about 75 elementary schools. (Center on International Education Benchmarking, 2014).

4. Design and methods

Design

Our empirical enquiry used quantitative data on district leaders enacting governance as perceived by their school principals. These data were collected among 399 school principals of 23 Dutch school districts in elementary education, using a survey. Social network data on social capital within school districts were collected using a social network survey among educational administrators (i.e. district leaders, central office administrators and school principals). Additionally, examples of the relation between school district social capital and governance at six school districts were described.

Sample

In order to obtain a sufficient response rate, we used “convenience sampling”: the researchers knew the majority of the approached district leaders in person via executive education programs, conferences, or consultancy projects. Ultimately, 23 school districts agreed to participate (17 independent, 6 public), about evenly distributed across urban, urban fringe, and rural regions. The total sample consisted of 33 district leaders (many school districts had a team of two district leaders), 58 central office administrators and 399 principals.

Additionally, six school districts were selected out of the 23 school districts participating in the study to illustrate the relationships between school district social capital and governance. To select these schools, we used extreme case sampling on the basis of the scores on the variable “offering support” (see below section measurement) assuming that this type of goal-directed intervention will affect school districts’ social capital directly. Accordingly, the three school districts (Anima, Celsus, Sapiens) with the highest scores on this variable and the three school districts with the lowest scores (Forum, Ante, Tempus) were selected (see Appendix 1). By using extreme sampling, we expected to find variation in the dependent variable school districts’ social capital as assessed by the pattern of social relationships. This variation offers illustrative examples from the six cases, obtained through interviews with district leaders, central office administrators and school principals.

Measurements

To assess the extent to which district leaders focus on different educational goals and use goal-directed interventions varying in level of coercion, a survey among school principals was used in order to prevent self-report bias of school district leaders (Devos et al., 2013). Focusing on goals was measured using 13 items selected from a questionnaire which was validated in a previous pilot-study (Hooge and Janssen, 2013). The items were to be scored on a five-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Factor analysis (PCA) with direct Oblimin rotation provided evidence that the 13 items contributed to a three-factor solution, explaining 73.8 percent of the variance. Factor 1 represents focusing on goals for math and language proficiency ($\alpha = 0.91$; mean inter-item correlation $= 0.72$), Factor 2 represents focusing on goals for teaching and learning processes ($\alpha = 0.90$; mean inter-item correlation $= 0.59$) and Factor 3 represents focusing on broader learning goals ($\alpha = 0.87$; mean inter-item correlation $= 0.68$). The internal consistencies (Cronbach’s $\alpha$) indicated that all scales had a good reliability (George and Mallery, 2003).

The variable using goal-directed interventions by the school district was assessed by using 11 items from an existing validated questionnaire (Hooge and Janssen, 2013). The items were to be scored on a five-point scale, ranging from 1 (strongly disagree) to 5
(strongly agree). Factor analysis (PCA) with direct Oblimin rotation showed that the items contributed to a three-factor solution explaining 62.6 percent of the variance. The items that cluster on one component suggested that Factor 3 represents offering support ($\alpha = 0.72$; mean inter-item correlation $= 0.40$), Factor 1 represents exerting pressure ($\alpha = 0.83$; mean inter-item correlation $= 0.55$), and Factor 2 represents taking special measures/sanctions ($\alpha = 0.66$; mean inter-item correlation $= 0.40$). The internal consistencies (Cronbach’s $\alpha$) indicated that the scales had acceptable (taking special measures/sanction) to good reliabilities (exerting pressure and offering support) (George and Mallery, 2003).

Social network survey. To map social capital as assessed by the pattern of social relationships, we used a social network survey. Making a distinction between instrumental and expressive social networks, all district leaders, central office administrators and school principals were asked to answer two social network questions. To delineate the instrumental network, we asked “Whom do you ask for advice?” To delineate the expressive network, we inquired: “With whom do you have more personal conversations?” A list of all the educational administrators (including principals, central office administrators, and district leader(s) per school district was attached to the survey comprising their names accompanied by a letter combination for each person (i.e. Ms. Yolanda Brown = AB). Only unique letter combinations were used. A binary rating scale was used: the respondents could indicate a person by answering the letter combination of the intended person, and as many persons as they wanted. We took a saturated approach (Scott, 2000), which means that respondents can choose from a fixed list of possible actors in the network. This approach generates a higher response rate and more complete and valid data than an unsaturated approach (Finnigan and Daly, 2010).

Data analysis
We analyzed the survey data using descriptive analyses, correlational analyses and multiple regression analyses. Only when the independent variables (focusing on educational goals) significantly correlated with the dependent variables (work-related advice and personal conversations), as well as with the mediator (using goal-directed interventions), mediation analyses have been carried out by means of the bootstrapping method (MacKinnon and Lockwood, 2008; Preacher et al., 2010). The 95 percent reliability interval of the indirect effects has been estimated with 5,000 bootstrap samples (Preacher et al., 2010).

By using social network analysis, we systematically mapped patterns of the instrumental and expressive social networks within the school district. The pattern of social relationships can be described at the district level in terms of density (i.e. the actual number of relationships present among administrators in the district relative to the number of potential relationships), and in terms of centralization (i.e. the extent to which a single person “dominates” the administrators’ network). Moreover, the pattern of social relationships can be described at the individual level in terms of out-degree (i.e. the number of colleagues the focal administrator turns to for advice or personal conversations) and in-degree (i.e. the number of colleagues that turn to the focal administrator for advice or personal conversation). We used In-degree and Out-degree measures to map “Whom do you ask for advice?” and “With whom do you have more personal conversations?” by means of UCINET including Netdraw (Borgatti et al., 2002).

5. Results
Descriptive findings
Before answering our research question, we first provide descriptive findings of district leaders enacting governance by focusing on educational goals and using goal-directed interventions, as perceived by their school principals. This is followed by a description of
the district social networks (as measured by seeking work-related advice and personal conversations) of all educational administrators within the school district (including school principals, central office administrators and district leaders).

Educational goals and interventions

In Table I the means and standard deviations of the different educational goals that district leaders set for schools and the type of interventions they use, as perceived by their school principals, are reported. District leaders primarily tend to focus on goals for math and language proficiency and for teaching and learning processes to a large degree (respectively 4.01 and 3.85 on average on a five-point scale). District leaders seem to focus on goals related to broader learning outcomes to a lesser extent (3.00 on average on a five-point scale). Paired t-tests showed that these differences were significant ($p < 0.001$). District leaders also tend to offer support and exert pressure to a larger extent (respectively 4.02 and 4.14 on average on a five-point scale) than to take special measures/sanctions (2.69 on average on a five-point scale). Paired t-tests showed that these differences are significant ($p < 0.001$).

The examples from the six school districts deepen these findings about the different educational goals that district leaders set for schools, and the interventions they used (see Tables II and III). Apparently, at four school districts the district leaders focused on educational goals aimed at math and language proficiency, taking the minimal standards of the Dutch Inspectorate of Education as the norm (see Table II). Only the forum school district takes its own district standards as the norm. At the Tempus district the district leader set no

### Table I.
District leaders focusing on educational goals and using goal-directed interventions, as perceived by their school principals

<table>
<thead>
<tr>
<th>Focusing on educational goals</th>
<th>Mean</th>
<th>SD</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Math and language proficiency</td>
<td>4.01</td>
<td>0.94</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>For teaching and learning processes</td>
<td>3.85</td>
<td>0.82</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Broader learning goals</td>
<td>3.00</td>
<td>1.01</td>
<td>1.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

### Table II.
Description focusing on educational goals by (the) district leader(s) per school district (illustrative cases)

<table>
<thead>
<tr>
<th>School district</th>
<th>Focusing on educational goals by (the) district leader(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anima</td>
<td>Minimal standards of the Education Inspectorate are the norm, target is 20% of the schools achieving the highest level of excellence. Broader learning goals concerning cultural and technical education are set at the school district</td>
</tr>
<tr>
<td>Celsus</td>
<td>Requirements with respect to teaching and learning processes, schools must meet the minimal standards of the Education Inspectorate. It is up to the school principals to set more ambitious and/or broader learning goals</td>
</tr>
<tr>
<td>Sapiens</td>
<td>Minimal standards of the Education Inspectorate are the norm, higher ambitions are set for the long term. No broader learning goals are set</td>
</tr>
<tr>
<td>Forum</td>
<td>School district standards concerning learning outcomes are the norm. No broader learning goals are set</td>
</tr>
<tr>
<td>Ante</td>
<td>Minimal standards of the Education Inspectorate are the norm. It is up to the school principals to set more ambitious and/or broader learning goals</td>
</tr>
<tr>
<td>Tempus</td>
<td>Minimal standards of the Education Inspectorate are the norm. No goals are set by the district leader</td>
</tr>
</tbody>
</table>
goals whatsoever. Concerning the use of interventions, the examples reveal considerable differences between school district leaders in the extent to which goal-directed interventions were used to support and stimulate schools to improve. Table III shows that the Anima district leader limited herself to mainly offering support, complemented with exerting a little pressure if necessary, e.g. demotion or dismissal of school principals. At Celsus, Sapiens and Ante, the district leaders used a balanced mix of interventions, deliberately deploying progressive degrees of coercion. The Forum and Tempus district leaders only used interventions if necessary, perceiving this as “a last resort.” These examples also shed light on the ways in which district leaders used interventions. In offering support, they appeared to encourage, challenge, facilitate and empower school principals, provided them with coaching, consultancy or training. A way to exert pressure is calling school principals to account for the accomplishment of goals. Measures/sanctions are taken if necessary, e.g. demotion or dismissal of school principals.

### Table III.
**Description of using interventions by (the) district leader(s) per school district (illustrative cases)**

<table>
<thead>
<tr>
<th>School district</th>
<th>Using interventions by (the) district leader(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anima</td>
<td>Mainly offering support in the sense of encouraging, challenging, facilitating and empowering school principals. If pressure is exerted, the district leader engages in a dialogue with school principals, monitors and evaluates.</td>
</tr>
<tr>
<td>Celsus</td>
<td>A deliberately balanced mix of offering support, exerting pressure and undertaking measures. Offering support by means of providing coaching, consultancy or training. A way to exert pressure is calling school principals to account for the accomplishment of goals. Measures/sanctions are taken if necessary, e.g. demotion or dismissal of school principals.</td>
</tr>
<tr>
<td>Sapiens</td>
<td>A deliberately balanced mix of offering support, exerting pressure and undertaking measures. Offering support by means of providing coaching, consultancy or training. Ways to exert pressure are closely monitoring school principals and opening up the dialogue to third (external) parties. Measures/sanctions are taken if necessary, e.g. demotion or dismissal of school principals.</td>
</tr>
<tr>
<td>Forum</td>
<td>Low usage of interventions, only new school principals are offered support. District leaders are relying on school principles. If measures/sanctions such as demotion or dismissal of school principals are taken, it is at late stage.</td>
</tr>
<tr>
<td>Ante</td>
<td>A deliberately balanced mix of offering support, exerting pressure and undertaking measures. Mainly offering support by means of fostering leadership and capacity at the schools. Only if necessary pressure is exerted and measures/sanctions are taken, in various ways.</td>
</tr>
<tr>
<td>Tempus</td>
<td>Low usage of interventions. Support is offered by enabling school principals to hire external consultancy. If the educational quality at the schools turns out to be inadequate or substandard, measures/sanctions such as demotion or dismissal of school principals are taken at late stage.</td>
</tr>
</tbody>
</table>

Findings from our social network survey showed that district instrumental networks are denser (28 percent) than the expressive networks (17 percent). This means that of all potential work-related advice seeking relationships between school principals, central office administrators and district leaders within a school district, about 28 percent of this potential was actually “used.” In addition, of all potential personal relationships that could occur between the educational administrators, about 17 percent of these potential personal relationships actually occurred.

The examples from the six cases illustrate differences in centrality and density across the six school districts in more detail (see Figure 1 and Table IV). Compared to the other educational administrators in the network, district leaders occupied a central position in the instrumental network. A school principal and/or central office administrator often accompanied district leaders in this central position. This central position allows them to have access to (and thereby control) the flow of resources that move through the network.
For instance, in this central position, district leaders tended to be asked disproportionally for advice, thereby offering more opportunities to enact their modes of governance and collect information for future action. The examples indicate that district leaders perceived the potential gains from their central position, but were also aware of the vulnerability of their...
dominant position. For instance, the Anima school district leader pointed out: “The integration and interconnectedness of people in this school district depends too heavily on me.” In contrast, Figure 1 and Table IV also unveil that in the networks that reflect personal conversations among the administrators, district leaders occupied a less central, sometimes even marginalized position in the network. The six cases also show that the networks can be characterized by subgroups. For instance, at the Celsus school district, a subgroup, consisting of the district leader, central office administrators, and a few school principals could be identified. The Celsus school district leader commented: “In this group, we like to share insights and ideas about innovative education.” Educational administrators in the school districts Sapiens, Ante, and Forum shared that educators tend to group together and increase their work-related advice seeking based on appreciation for each other’s capacities, knowledge, and “thinking and work level.” As a central office administrator at Ante explained: “The ‘good ones’ in our school district like to seek each other out.” According to the school principal at Sapiens, principals of higher performing schools are getting together more easily than principals of schools that are under sanction: “It is difficult for us to collaborate with a low performing school.”

**The role of district leaders for organizational social capital**

To answer our research question, we examined the relationship between district leaders’ enacting governance by focusing on educational goals and the social capital among all educational administrators (including themselves) in their school district (i.e. tendency to seek other administrators for work-related advice and personal conversations). Correlational analyses indicated modest positive correlations between focusing on goals and the school district’s social capital in terms of out-degree, meaning that the more district leaders were focusing on educational goals, the more educational administrators in the district tended to turn to each other for advice ($r = 0.11 \ (p < 0.01)$ and $0.15$ to $0.21 \ (p < 0.05)$) and for personal conservations ($r = 0.11$ and $0.11 \ (p < 0.01)$ and $-0.05$ ns) (see Appendix 2). In contrast, we did not found correlations between focusing on educational goals and the school district’s social capital in terms of in-degree, indicating that the degree in which district leaders were perceived as focusing on educational goals was not associated with the extent to which educational administrators within the school district are being sought for advice ($r = 0.00$ to $0.03$ ns) or for personal conservations ($r = -0.03$ to $0.03$ ns) (see Appendix 2).
Furthermore, correlational analyses indicated modest positive correlations between goal-directed interventions and the school district’s social capital in terms of out-degree. The more district leaders were perceived using goal-directed interventions, the more educational administrators in the district tended to turn to each other for advice ($r = 0.11$ and $0.14$ ($p < 0.01$) and $0.09$ns) and for personal conservations ($r = 0.11$ and $0.16$ ($p < 0.01$) and $0.04$ns) (see Appendix 2). With respect to the relation between district leaders’ interventions and the school district’s social capital in terms of in-degree, we found one significant correlation ($r = 0.13$ ($p < 0.01$)), indicating that the more district leaders offered support as intervention, the more all educational administrators were being sought for advice.

Finally, we examined whether the relationship between district leaders enacting governance by focusing on educational goals and the district’s social capital is mediated by the use of goal-directed interventions. In other words: does it matter which types of interventions district leaders used to understand whether focusing on goals may affect the school district’s social capital? Results from our data (see Figures A1 and A2, Appendix 3) seemed to suggest that offering support by district leaders both reinforced the positive effect of focusing on educational goals on social capital as well as mitigated the negative effects. In other words, when district leaders intervene by supporting schools to improve, their focus on educational goals will even more lead to increased advice seeking. In addition, offering support by district leaders will also compensate the effect that a lack of focus on educational goals can lead to increased reliance on other administrators than the district leader. In contrast, using the most “coercive” form of interventions to stimulate schools to improve, that is, taking special measures/sanctions, seemed to reinforce the small negative effects of focusing on educational goals on the district’s social capital. Finally, we found that using exerting pressure as intervention did not affect the relationships between the variables under study.

The examples shed some light on how district leaders influence their organizational social capital differently. Districts leaders from the three school districts with the lowest score on the variable offering support, did not seem to be focused on creating a dense, supportive community of education administrators to foster good quality education at the schools. For example, at the Tempus district, the district leader delegated responsibility for high-quality education to the school principals, referring to the doctrine of school autonomy. He explains: “It is up to them to ensure education of good quality at their school, my role is limited to funding and operating conditions.” At both the Forum and Ante districts, the district leaders attempted to involve educational administrators in policymaking and steering activities, but without noticeable impact. At the Forum school district, this was probably due to the rather coercive bureaucratic approach, and at Ante school district this was likely related to a lack of a shared vision on ambitious educational goals.

In contrast, the districts leaders from the three districts with the highest scores on offering support seemed to better succeed in making their organization’s social capital thrive. For example, The Anima district leader observed positive effects of collaboration and joint learning among the educational administrators in her school district. She emphasized her supporting role: “I am building networks and connect people districtwide.” The Celsus district leader hired external support to create professional learning communities: “I want my principals to undertake a learning journey toward joint leadership and shared education practices.” The district leader at Sapiens deliberately promoted exchange and collaboration throughout his district by “starting on a small scale and gradually tempting, supporting and empowering people to join-in.”

6. Discussion, implications and conclusion

Discussion

This study was set out to analyze to what extent governance goals and interventions affect school districts’ social capital (research question). Our results indicated that the leaders of
Dutch school districts focus most on goals for math and language proficiency. Moreover, focusing on goals for teaching and learning processes appeared to have a more positive impact on the districts’ social capital. An explanation may be that by focusing on teaching and learning, school principals and central office administrators felt supported, and inspired by, goals that are most directly aligned with their daily work with teachers and school staff, resulting in increased relationships with other administrators in the district. These findings increase our understanding of how focusing on specific educational goals (in this case, goals for teaching and learning) may contribute to building and having access to the web of social relationships between central office administrators and school principals through which district policy may ultimately impact educational practice.

The findings also showed that offering support as a goal-directed intervention appeared to be the strongest leverage for promoting school district’s social capital. Offering support did not only reinforce the positive impact of focusing on educational goals by district leaders on organizational social capital, but also seemed to compensate the impact a lack of focus on educational goals has on increased reliance on other administrators than the district leader.

The examples from six school districts revealed that most district leaders deliberately searched for a balanced mix between different interventions varying in level of coercion, depending on situational contingencies. This finding confirms what is often asserted in the literature on governance of organizations (i.e. McAdams, 2006; Mordaunt and Cornforth, 2010), and on situational leadership (i.e. Ali, 2017): there is no one best way to govern an organization; what matters is the degree to which it is adapted to the internal and the external situation.

Our data offer support for the assumption that district governance is a collective and highly interdependent endeavor. The results revealed school principals and central office administrators to be important links in the enactment of school district governance. District leaders seemed to be focused on school principals in order to get district steering and policies translated into practice and to accomplish educational goals. School district leaders also depend on central office administrators: they call on their capacities to assist with governance actions and to reinforce them. These findings corroborate earlier findings about district leaders’ dependency on educational administrators throughout the whole school district to mediate policies, decisions and use of resources, and translate them into action (Daly and Finnigan, 2016; Honig, 2006; Leithwood and Azah, 2017; Sleegers and Leithwood, 2010).

The examples from six cases illustrated how, and in which situations, district leaders involved educational administrators in their policymaking and steering activities, and shared their governance responsibilities with them. School district leadership thus seemed to be stretched over a group of individuals and dispersed through all levels of the organization, rather than being a heroic act of one district leader enacting different governance modes (the “heroic leader paradigm”). These examples stress the importance of analyzing district leadership practices from a distributed perspective (Spillane, 2006), to understand how school district governance takes place in the context of such complex and multi-layered organizations as school districts.

Finally, the findings contribute to a deeper understanding of the role district leaders may play in building organizational social capital. It turned out that the more district leaders enact governance, the demands for work-related advice and personal conservations in the social networks of educational administrators grow, and at the same time the number of administrators that are approached for advice and personal conservations shrinks. As a result, a narrowed subgroup may arise within the social network of educational administrators, which holds a central, sometimes dominant, position in the exchange of district resources and operates as a linking pin, a finding also found in previous research (Daly, 2010; Penuel et al., 2010).
Limitations and future research
Along with its several strengths, this study also has some limitations. The first limitation of our study is the external validity of our findings. By using “convenience sampling,” the generalizability of our findings can be questioned. Future studies, using representative and more heterogeneous samples, are needed to validate our findings.

A second limitation of the study is its cross-sectional nature. The analyses we used cannot ascertain causal relations and thus only showed a “snapshot image” of the situation. As a consequence, the study may have exposed coincident temporary relationships. In order to ensure causality, a longitudinal design is needed. By investigating the influence of district leaders on school district social capital over time, future research can increase our understanding of how district leaders can develop and maintain their organization’s stock of social capital. A further step to provide more detailed and in-depth information about the complex and dynamic relations between district leaders, central office administrators and school principals through which governance takes place, would be to conduct mixed methods studies in which survey data with multiple case studies and longitudinal data are combined.

Finally, in our study we focused on how school district governance affects the pattern of social relationship among school administrators. Although this relation may ultimately have an impact on school district leaders’ responsibility for high-quality education, we did not examine one of the most important indicators of educational quality: student outcomes. In future research information about student achievement, student background variables (e.g. SES, gender, ethnicity, past performance) and school composition, should be included in the analyses. This research is needed to unravel the paths through which district leaders affect schools’ educational quality and student achievement. In our view, this is imperative to better understand the importance of school district offices in supporting educational effectiveness and school improvement.

Conclusion
To better understand how governance takes places, researchers have started to analyze the pattern of social relationships (“social capital”) between educational administrators (district leaders, central office administrators, school principals, assistant principals) through which governance may impact student achievement. So far, the role of district leadership practices in shaping the pattern of social relationships has been neglected. In this study, we offer insights in the way in which social capital may be affected through district leaders enacting governance by focusing on educational goals and using goal-directed interventions.

The findings of our study demonstrate that governance practices of district leaders matter. If district leaders enact governance by focusing on educational goals (more specifically, goals on teaching and learning processes), they contribute to the organization social capital of their school districts. Moreover, district leaders can reinforce the positive impact of focusing on goals by means of using interventions. By using a supportive and connective governance style, rather than a “muscular” command-and-control style, district leaders can reinforce coherence of alignment in the entire school district.

Note
1. School districts with only one school generally have a different governance structure compared to larger school districts. Because of the non-comparability with the governance structure of larger school districts, these “one-school” districts are excluded from this study.
References


Center on International Education Benchmarking (2014), System and School Organization, Center on International Education Benchmarking, Washington, DC.


Further reading


Appendix 1

<table>
<thead>
<tr>
<th>School District</th>
<th>Anima</th>
<th>Celsus</th>
<th>Sapiens</th>
<th>Forum</th>
<th>Ante</th>
<th>Tempus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score on the variable “offering support”</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Denomination</td>
<td>Independent</td>
<td>Independent</td>
<td>Independent</td>
<td>Independent</td>
<td>Public</td>
<td>Public</td>
</tr>
<tr>
<td>Number of students</td>
<td>1,500–2,000</td>
<td>3,750–4,250</td>
<td>2,000–2,500</td>
<td>6,750–7,250</td>
<td>1,750–2,250</td>
<td>3,500–4,000</td>
</tr>
<tr>
<td>Number of schools</td>
<td>2–5</td>
<td>11–15</td>
<td>6–10</td>
<td>&gt; 15</td>
<td>11–15</td>
<td>11–15</td>
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<tr>
<td>Degree of urbanization</td>
<td>Urban fringe</td>
<td>Urban fringe</td>
<td>Urban</td>
<td>Rural</td>
<td>Rural</td>
<td>Rural</td>
</tr>
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</table>

Table AI. Description of the six school districts
### Appendix 2

<table>
<thead>
<tr>
<th>1a</th>
<th>1b</th>
<th>1c</th>
<th>1d</th>
<th>2a</th>
<th>2b</th>
<th>2c</th>
<th>2d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. “Ask for advice” – network &lt;br&gt;a. Out-degree normalized</td>
<td>1</td>
<td>0.40***</td>
<td>0.61***</td>
<td>0.06</td>
<td>0.54***</td>
<td>0.46***</td>
<td>0.16***</td>
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<td>b. In-degree normalized</td>
<td>1</td>
<td>-0.05</td>
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<td>0.35***</td>
<td>0.71***</td>
<td>-0.05</td>
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<td>c. Out-degree</td>
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<td>0.10*</td>
<td>0.12**</td>
<td>0.01</td>
<td>0.30***</td>
<td>0.20***</td>
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<tr>
<td>d. In-degree</td>
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<td>0.02</td>
<td>0.38***</td>
<td>0.04</td>
<td>0.60***</td>
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<td>2. “Personal conversation” – network &lt;br&gt;a. Out-degree normalized</td>
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<td>0.65***</td>
<td>0.16**</td>
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<td>0.70***</td>
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<td>0.23***</td>
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<tr>
<td>d. In-degree</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. Focusing on educational goals &lt;br&gt;a. For Maths and language proficiency</td>
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<td>0.03</td>
<td>-0.02</td>
<td>-0.15**</td>
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<tr>
<td>b. For teaching and learning processes</td>
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<td>-0.14**</td>
<td>0.11*</td>
<td>0.01</td>
<td>0.01</td>
<td>-0.12*</td>
<td>0.11*</td>
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<td>c. Broader learning goals</td>
<td>0.01</td>
<td>-0.16**</td>
<td>0.21***</td>
<td>0.00</td>
<td>-0.07</td>
<td>-0.11*</td>
<td>-0.05</td>
</tr>
<tr>
<td>4. Using interventions &lt;br&gt;a. Offering support</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>0.13***</td>
<td>0.13*</td>
<td>-0.02</td>
<td>0.16***</td>
</tr>
<tr>
<td>b. Exerting pressure</td>
<td>0.04</td>
<td>-0.04</td>
<td>0.11*</td>
<td>0.04</td>
<td>0.04</td>
<td>-0.12*</td>
<td>0.11*</td>
</tr>
<tr>
<td>c. Taking special measures/sanctions</td>
<td>-0.02</td>
<td>-0.15**</td>
<td>0.14*</td>
<td>-0.02</td>
<td>-0.08</td>
<td>-0.17**</td>
<td>0.04</td>
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</tbody>
</table>

**Notes:** *p < 0.05; **p < 0.01; ***p < 0.001

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**Table AII.** Pearson correlations between focusing on educational goals and using interventions by district leader(s) and measures for the social networks in school districts
Appendix 3

Role of district leaders

Figure A1. District leader(s) using interventions, mediating the relation between their focusing on educational goals and the structure of the organizational social capital (Out-degree)

Notes: *p<0.1; **p<0.01; ***p<0.001
Figure A2.
District leader(s) using interventions, mediating the relation between their focusing on educational goals and the structure of the organizational social capital (In-degree)

Notes: *p<0.1; **p<0.01; ***p<0.001

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