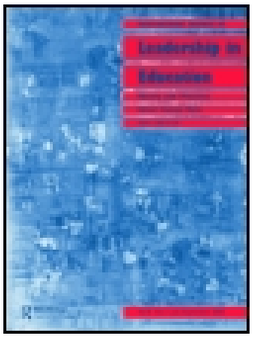

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Leaders' collaborative problem-solving behavior in conversations in Norway and New Zealand

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ABSTRACT

Solving complex problems is critical to educational leaders' ability to achieve improvement in schools. Much of this problem-solving is carried out in conversations with staff. This paper draws on theories of collaborative problem-solving and interpersonal effectiveness to examine the behavior of leaders in such conversations – in Norway and New Zealand. Analyses of conversation transcripts of 17 Norwegian and 18 New Zealand leaders revealed that only half of the leaders overall engaged in advocacy, inquiry, and collaborative planning behaviors. Slightly less Norwegian leaders tended to engage in open and collaborative problem-solving behaviors compared to their New Zealand colleagues. New Zealand leaders, however, seemed less open and more directive in proposing solutions. Overall, we observed a lack of deep, critical inquiry and discussion of problems and their causes, which is likely to stand in the way of effective problem-solving and school improvement.

Introduction

Educational leaders face and respond to problems on a daily basis. For example, there may be problematic beliefs held about effective teaching and assessment that are impacting negatively on students. Resolving such problems is important, as if left unresolved they can have significant negative consequences for student learning and school improvement (Bryk et al., 2015; Dempster & Berry, 2003). Effective problem solving is thus critical to educational leaders' ability to achieve improvement in schools (Mumford et al., 2017; Saiti, 2015; Zaccaro et al., 2000).

The problems leaders face are often complex as they are ill-structured and have multiple potential solutions (Heifetz et al., 2009; Simon, 1993). What constitutes an effective solution to such complex problems depends on the values and beliefs of those involved or impacted by the problem and its solution. Solving complex problems is not usually a solitary process, but happens in the context of conversations with those involved. Their collaboration is needed for the analysis of the problem, its causes, and the identification of a solution (Graesser et al., 2018; Saiti, 2015).

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While researchers have proposed different models of problem-solving (Bransford & Stein, 1993; Leithwood & Stager, 1989; Mumford et al., 2000), and some have researched leaders' problem-solving using scenarios (Allison & Allison, 2003; Zaccaro et al., 2000), only a few studies have investigated the actual conversations educational leaders have when attempting to solve problems (Robinson et al., 2014; Le Fevre & Robinson, 2015; Le Fevre et al., 2015; Meyer et al., 2017; Robinson et al., 2020; Leithwood & Steinbach, 1995). A wider set of studies has looked into improvement focussed discussions in school inquiry teams, feedback conversations after observations, and coaching conversations (see Timperley, 2015, for an overview). These differ from this research as they generally focus on the use of evidence in conversations (i.e., conversation content) or the use of specific protocols, and not on leaders addressing specific problems with individual staff. More research into the field of problem-solving behaviors has also been undertaken in the management and psychology fields (e.g., Cameron et al., 2019; Quaquebeke & Felps, 2018). We draw on this research in our theoretical framework.

Given the lack of research on educational leaders' problem-solving specifically, this study examined the case of educational leaders' behavior during problem-solving conversations about real issues. This is important, as most employee behaviors are embedded in dynamic social contexts and cannot be fully understood through perceptions of behavior or role plays (Johns, 2006; Lehmann-Willenbrock & Allen, 2018; Spreitzer et al., 2005). Our sample includes principals, deputy principals, and team leaders in secondary school contexts. The study focuses on behaviors that support collaborative problem-solving where the intention is for both parties' beliefs to be heard and critically evaluated, and for both parties to be involved in finding a solution. Such collaborative problem-solving is more likely to lead to effective and sustained solutions based on evidence evaluated by both parties, than solutions marked by unilateral decision-making of the leader (Argyris & Schön, 1996; Mumford et al., 2017; Tschannen-Moran, 2014).

Furthermore, the current study examines educational leaders' problem-solving in two contexts – Norway and New Zealand. These two cases were selected for comparative purposes as they are similar in size and school system, and award similar autonomy to their teachers and educational leaders. However, New Zealand, coming from a British schooling tradition, has a more hierarchical leadership structure and accountability system, while Norway has been described as a late and reluctant adopter of accountability policies in schools (Christensen & Lægreid, 2008; Robertson & Hill, 2016). Leadership behavior is likely to be influenced by such contextual factors and thus the comparison of leaders' problem-solving behavior in these two contexts could further our understanding of such influence (Clarke & O'Donoghue, 2017).

Next, we summarize research on professional conversations and leaders' problem-solving in education and wider leadership domain. We then describe the theoretical framework this study draws on, incorporating the reviewed empirical research on leaders' problem-solving behavior and theories of interpersonal effectiveness and problem-solving.

Research on leaders' problem-solving

Most research on educational leaders' problem-solving has used standardized scenarios (Allison & Allison, 1993; Brenninkmeyer & Spillane, 2008; Leithwood & Stager, 1989; Spillane et al., 2009), or interviews and documents (Mintrop & Zumpe, 2019).Leithwood

and Stager (1989) used written scenarios to compare expert leaders' problem-solving with those of non-expert leaders. Largely using the same measures and scenarios as Leithwood and Stager, Spillane and colleagues extended this research. Similarly, Allison and Allison (1993) used think-aloud measures to compare novice and experienced principals' problem-solving. Findings from these studies suggest that expert principals adopted a more deliberate, systematic, and rational approach to problem-solving than their non-expert colleagues. Mintrop and Zumpe (2019) followed nine experienced principals enrolled in a doctoral program over two years and examined through document analysis and interviews how principals framed problems they encountered in school-based improvement projects. The authors noted that the principals seemed to look for confirmation of their initial solution rather than problem causes or additional information in their inquiries.

In contrast to studies using scenarios or interviews, this study draws on transcripts of educational leaders in conversation with their staff discussing actual problems, thus enabling an investigation of leaders' behavior when solving complex problems they face in their daily work (Lu et al., 2015). The fact that our data present real rather than 'mock' conversations is important as contextual complexities such as psychological closeness (i.e. existing relationships) can affect leaders' behavior when considering their responsibilities to individuals and potential outcomes of their conversations (Mencl & May, 2009).

Previous studies examining leaders' problem-solving conversations have shown that leaders typically engage in unilateral rather than collaborative problem-solving. Leithwood and Steinbach's (1995) research included an analysis of transcripts confirming their scenario based findings. The authors and colleagues (2014, 2015, 2017, 2020) have in their research used the methods and theoretical frameworks of Argyris and Schön (1974, 1996) to examine educational leaders' problem-solving conversations, noting that leaders tend to refrain from openly disclosing their views, have difficulty explaining them, and assume others share their beliefs and assumptions about the problem. These studies have been conducted in New Zealand, leaving a gap in regard to educational leaders' problem-solving in other contexts.

Research from the fields of leadership and communication have similar results, indicating that individuals moderate their views, find it difficult to listen actively, argue for their own views instead of being curious about others' views, and avoid empathy eliciting situations due to personal discomfort (e.g., Cameron et al., 2019; Tangirala & Ramanujam, 2012; Tetlock & Boettger, 1989). Such behaviors tend to lead to either the avoidance of problem-solving conversations altogether, or to conversations in which important information is not shared, beliefs are not tested or inquired into, and in which leaders do not collaborate with others in finding solutions but jump to solutions that might not address underlying causes (Robinson et al., 2020; Quaquebeke & Felps, 2018; Zand, 2016).

Theoretical Framework

This study draws on theories of interpersonal effectiveness (Argyris & Schön, 1974, 1996), theories of problem-solving (Nickles, 1981; Robinson, 1995), and empirical research on problem-solving behavior (e.g., Brenninkmeyer & Spillane, 2008; Leithwood & Steinbach, 1992; Mumford et al., 2000) to identify behaviors deemed effective in supporting collaborative problem-solving.

The ideas put forward on human behavior in organizational learning (Argyris & Schön, 1974, 1978) guided our understanding on what effective problem-solving behavior may look like. Specifically, how the values and beliefs an individual holds influences their behavior. According to Argyris and Schön (1974), certain values and beliefs cluster together to form mental models. They describe two such models. People operating on Model 1 hold a more competitive and defensive stance that tends to produce short term solutions, whereas Model 2 involves a more collaborative and open stance that allows for long-term perspectives on possible solutions. The values underlying Model 1 are: maximize winning and minimize losing; avoid eliciting negative feelings; being rational and minimizing emotionality (Argyris & Schön, 1974). These values are apparent in leaders' behavior when they, for example, imply their beliefs through leading questions, privately confirm them, or re-state their own views without engaging with others' views, in order to 'win the argument'. Leaders avoid negative emotions and stay rational by not disclosing beliefs that could upset others or by not highlighting their own shortcomings, and by steering the conversation along a 'safe' path avoiding contentious topics and critique of self and others. These values and associated behaviors are, however, ineffective in motivating collaborative problem-solving as information is not shared and the aim is to 'win the argument'.

In contrast, the values for Model 2 are: respect for self and others; valid information; and internal commitment (Argyris & Schön, 1974). Research has found that people tend to embrace Model 2 values and believe that they express them in action. However, people's de facto behavior is closer to Model 1, especially when they feel vulnerable, threatened, or worried about their relationships with others (Argyris & Schön, 1974, 1996). In short, a variety of beliefs and emotions tend to cloud people's judgment and hinder behaviors conducive to effective problem-solving (Mencl & May, 2009; Yariv, 2006).

Three behavioral dimensions that stem from Model 2 values are deemed important in effective, collaborative problem-solving conversations: advocacy, inquiry, and collaborative planning (Argyris & Schön, 1974, 1996; Brenninkmeyer & Spillane, 2008;Leithwood & Steinbach, 1992). Advocating or voicing your own beliefs and inquiring into your own and others' beliefs about the problem are important as both parties need to understand each other's thinking to openly discuss the problem's nature, causes, and potential solutions (Tjosvold, 2008; Zand, 2016). Effective advocacy and inquiry enable the discussion and resulting solutions to be based on the most valid information available (Argyris & Schön, 1974). Effective leaders disclose their beliefs, explain their reasoning, and support others to do the same. They invite others to critique their beliefs and critically evaluate others' beliefs to detect and correct faulty reasoning (Stanovich & West, 1997). Furthermore, respectful inquiry fundamentally satisfies others' needs for feelings of competence, relatedness, and autonomy (Quaquebeke & Felps, 2018). This includes posing open questions into others' beliefs or reactions to disclosed beliefs. The third dimension, 'collaborative planning', focuses on the extent to which leaders involve others in deciding on a way forward and monitoring and evaluating progress through checking for agreement and inquiring into others' beliefs about solution strategies (Zaccaro et al., 2000).

Behaviors in these dimensions can only be deemed effective, however, if they are enacted in ways that demonstrate Model 2 values. Effective leaders engage in these

collaborative problem-solving behaviors *whilst* demonstrating the values of respect for one self and others, valid information, and internal commitment (Argyris & Schön, 1974). Respect is shown in honest, open and non-judgmental disclosure of beliefs and genuine inquiry into others' beliefs, especially when these differ from one's own (Le Fevre, Robinson & Sinnema, 2015). Open and respectful inquiry is more likely to elicit an intrinsic commitment to problem-solving, where behavioral change is rooted in a shared understanding of the problem (Deci & Ryan, 2008; Kuvaas et al., 2016).

The value of 'valid information' demands open-mindedness and an active quest for eliciting and critically evaluating one's own and others' views (Hare, 2003; Spiegel, 2012). It is closely interlinked with the value of respect as only by respectfully pursuing valid information will leaders build the relational trust needed to disclose, discuss, and critique each other's views (Zand, 2016). The third value involves increasing internal rather than external commitment to solving the problem. Internal commitment is increased when views are shared and both parties feel they are being heard and involved in the solution-finding process (Bambacas & Patrickson, 2008). In contrast, persuasion and defensive reasoning trigger extrinsic motivation, where one takes action to avoid sanctions or to claim rewards, and is not conducive to long term behavioral change (Gagne & Deci, 2005).

The impact of culture

Culture influences people's value and belief systems, behavioral rules, and norms, and the way they talk (Carpara & Cervone, 2000; Hofstede, 2001). Language is both a behavioral expression of culture, and a creator of it; as linguistic structures are socially organized, they reflect and in turn influence the society they come from (Ochs, 1986). For this reason, one can expect there to be differences in the way people talk in countries such as Norway and New Zealand.

Comparing conversational behavior in Japan and New Zealand, Hannah et al. (2019) observed that behaviors appeared outwardly similar across countries, but that they were underpinned by different cultural realities. Similarly, Lehmann-Willenbrock et al. (2014) explored different problem-solving behaviors in German and US teams. Germans seemed to focus more on problem analysis and held a highly critical stance, while their US counterparts were more focused on solution-finding and socio-emotional aspects of problem-solving.

Even nations that are perceived to be similar can show subtle but important differences as a comparison of behaviors in the Scandinavian nations of Sweden, Denmark, and Norway showed (Warner-Søderholm, 2012). While New Zealand and Norway are both western industrialized nations, differences are likely to be observed in problem-solving behaviors. In the next sections, we note similarities and differences in the educational systems that might influence leaders' behavior in each country. We in particular note the focus on accountability in schools that has developed in the two countries over the last two decades.

Norway

Norway is a relatively small country in Northern Europe. The majority of the 5.3 million population is of Norwegian descent (83%). Immigrants are from other European countries (54%), Asia (31%), Africa (13%), and America and Oceania (2%). Norway also has

indigenous populations with Sami being the largest group. Unfortunately, there are no official records of who identifies as indigenous, thus it is difficult to estimate proportions.

Norwegian student performance in PISA is relatively high and there is relatively high equity across results (OECD, 2016b). However, large within-school variation in performance indicates that some learning environments are less positive than the OECD average (EACEA, 2018). The majority of students (55%) attend schools with more than 300 students, of which the majority are state funded schools (97%) (Norwegian Directorate for Education and Training, 2018). Each school has a principal and, depending on school size, assistant principals and/or department leaders (OECD, 2007). Legislation and regulations, including the national curriculum, form a binding framework, but local authorities, schools and teachers are relatively autonomous in their implementation. Teachers report a high degree of self-efficacy and motivation to teach, but receive less feedback and participate in fewer professional development activities than teachers in other OECD countries with principals generally focusing more on administrative than school improvement tasks (OECD, 2016b). However, over recent years there has been a heightened focus on accountability in Norway with schools being held responsible for student outcomes (Christensen & Lægreid, 2008; Hatch, 2013).

New Zealand

New Zealand is an island nation in the South-western Pacific. The majority of the 4.8 million population are of European descent (70%); with indigenous Māori as the largest minority (16.5%), followed by Asians (15%) and Pasifika (those with Pacific Island ancestry; 8%). Other ethnic groups include Middle-Eastern, Latin American, and African (1%).[1] New Zealand's education system has been described as a high performance, but low equity system. While the highest achieving students excel, and mean performance is comparatively high, achievement data typically show large disparities, with minority and students from low socio-economic areas being over-represented in the lowest quartile of the distribution (OECD, 2013, 2016a; Ogle et al., 2003).

Most New Zealand schools are small, especially primary schools with 31% having fewer than 100 students, and only 9% having 500 or more students. Only 12% of secondary schools have 1500 students or more (Wylie et al., 2016). Schools, principals, and teachers are highly autonomous relative to education systems globally (Hanushek et al., 2013). Since 1989, schools have been independent, self-managing administrative units. Each school is managed by a board of trustees made up of parents, a staff member, a student (in secondary schools), and the principal (Ministry of Education, 2007). Schools are hierarchically structured with the principal carrying most leadership responsibility. The principal's role is seen as particularly wide-ranging in comparison to other jurisdictions due to the schools' self-managing nature and lack of district administration or regional education boards (Wylie et al., 2016). Typically, principals work with a senior leadership team that, depending on school size, includes one or more deputy principals. Reforms in the late 1980s have placed schools and principals more and more at the forefront of accountability measures, with performance reviews and school-level reports to board of trustees and the Ministry of Education (Robertson & Hill, 2016).

This study

New Zealand and Norway are interesting cases to compare as they are similar in population size, population density, and in indicators of social progress (OECD, 2016a, 2016b). Both countries have, over the last decade, shown a growing commitment to improving equity in student outcomes and in strengthening accountability in schools (Hatch, 2013; Robertson & Hill, 2016). In both countries, an emphasis exists on leaders improving teaching quality. These overarching similarities enable a focus on the subtleties of how culture might impact the enactment of leaders' problem-solving behaviors. We examine and then compare leaders' behaviors in problem-solving conversations in both Norway and New Zealand.

Two research questions guided this study:

- What collaborative problem-solving behavior do leaders use in problem-solving conversations with staff?
- What are similarities and differences in leaders' behaviors in problem-solving conversations in Norway and New Zealand?

Methods

Our research investigates leaders' problem-solving as a contemporary phenomenon in a real-world context – in their conversations with staff. Our research thus encompasses case studies of Norwegian and New Zealand leaders and a cross-case analysis in which we examine commonalities and differences (Borman et al., 2006; Yin, 2018). This section provides an overview of participants in each case and the data collection and analysis strategies.

Participants

Norwegian data were collected from seventeen leaders involved in professional learning aimed to improve interpersonal effectiveness. Participants included secondary school principals, deputy principals, and department leaders. The majority were female and aged between 51 and 60 years. New Zealand data were collected from eighteen leaders enrolled part-time in a university graduate course in educational leadership that focused in part on improving interpersonal communication. While the course included early childhood, primary, and secondary leaders, only data from secondary leaders were selected for this study to ensure comparability with Norwegian data. Participants included deputy principals, department and team leaders. Of the eighteen leaders, ten were male, and most were aged between 31 and 40 years old. While the leaders in both samples held different positions of power within the school hierarchy, only conversations were selected in which leaders addressed problems with staff in positions subordinate to them. Thus, similar power relationship existed between the participants in the conversations. For participant characteristics see Table 1.

Data collection

The paper draws on 35 transcripts of real problem-solving conversations between a leader and a staff member. Leaders recorded a problem-solving conversation at the beginning of the

Table 1. Participant demographics (n = 35).

Characteristic		Norway		New Zealand		Total	
		N	(%)	*N*	(%)	*N*	(%)
Gender	Male	7	41%	10	56%	17	49%
	Female	10	59%	8	44%	18	51%
Age group (years)	20–30	0	0%	1	6%	1	3%
	31–40	0	0%	10	56%	10	29%
	41–50	3	18%	6	33%	9	26%
	51–60	9	53%	1	6%	10	29%
	61+	3	18%	0	0%	3	9%
	Unknown	2	12%	0	0%	2	6%
Ethnicity	Norwegian	17	100%	0	0%	17	49%
	NZ European	0	0%	13	72%	13	37%
	NZ Māori	0	0%	1	6%	1	3%
	Asian	0	0%	1	6%	1	3%
	Other*	0	0%	3	17%	3	9%
Highest qualification	Bachelor's Degree	6	35%	5	28%	11	31%
	Graduate Diploma	1	6%	5	28%	6	17%
	Postgraduate Diploma/Certificate	0	0%	8	44%	8	23%
	Masters or higher	8	47%	0	0%	8	23%
	Unknown	2	12%	0	0%	2	6%
Years of leadership experience	Less than 2 years	0	0%	3	17%	3	9%
	2–4 years	1	6%	7	39%	8	23%
	More than 4 years	14	82%	8	44%	22	63%
	Unknown	2	12%	0	0%	2	6%

Percentages may not sum to 100% due to rounding.
*'other' included recent immigrants from Europe (n = 2) and South Africa (n = 1).

course to provide baseline data regarding leaders' behavior. Thus, leaders in both countries had not studied the theory or practice of effective interpersonal problem-solving at the time of data collection. Leaders were asked to select a problem that was important to them to resolve. Although leaders in both countries went on to study interpersonal effectiveness and to do some analyses of their conversations to learn about their own behavior and how they could improve, these data were not within the scope of this study. This study focussed on the baseline data of leader performance prior to any intervention. New Zealand leaders also completed a short questionnaire about the context of their conversations. Norwegian leaders studied in a smaller programme cohort lead by the researcher, thus the context of the conversations was known to the researchers.

The conversations were part of leaders' day-to-day work and focused on parental complaints, staff behavior, or teaching practice. Conversations differed in length so to ensure comparability, our analysis focused on one section of the transcript that centered on the problem the leader wanted to address. These sections were typically 6–8 minutes long. Conversations were transcribed for analysis. Norwegian transcripts were translated into English by one Norwegian author.

Data analysis

An analysis codebook was developed to identify effective problem-solving behaviors as outlined in our theoretical framework (see Appendix A). This was revised from a previous study (Robinson et al., 2020). For each of the behavioral dimensions – advocacy, inquiry, and collaborative planning – we described three behavioral indicators. For example, the advocacy dimension consists of the following three indicators: 1)

discloses own belief about the problem, 2) provides grounds for own beliefs about the problem, and 3) critiques other's point of view. The codebook encompasses criteria for each indicator specifying when the behavior demonstrates Model 1 or Model 2 values.

To establish agreement on behavioral indicators, three of the authors independently coded one Norwegian and one New Zealand transcript to discuss and clarify criteria for each indicator. Resolution was achieved by discussion and clarification of the application of the theoretical model, and revision of coding rules until they were interpreted and applied consistently (DeCuir-Gunby et al., 2011).

To answer the first research question 'What behavior do leaders use in problem-solving conversations with staff about real problems?', we conducted a case analysis for each country (Yin, 2018). We coded each transcript for behavioral indicators and patterns of presence/absence of behaviors. We thus coded whether leaders had one or more instances of a behavior. We examined presence/absence rather than frequency as a high frequency of a behavior would not necessarily indicate an improvement in conversation quality. Leaders could enact behaviors that demonstrated Model 1 or Model 2 values in the same conversation, thus transcripts could be coded in both categories.

To answer the second research question 'What are similarities and differences in the behaviors of leaders in problem-solving conversations in Norway and New Zealand?' we conducted a cross-case analysis (Borman et al., 2006) and compared patterns in behaviors across transcripts. Behaviors meeting the coding criteria differed in quality. We explored these differences because behavior quality is likely to impact the quality of the discussion and problem examination. However, categorizing behavior as low or high quality across a transcript was difficult given the low number of instances per indicator. We thus engaged in a qualitative analysis rather than categorization and present exemplified qualitative differences in leaders' behaviors across the two countries. It has to be noted that the analysis of specific behaviors in problem-solving conversations has a holistic component, in that the coding of a behavior often has to take into account the context, content, and previous behaviors in the conversations. For example, to identify whether a leader provides grounds for their own belief, the coder needs to be aware of and link the behavior to a belief previously disclosed in the conversation by the leader, i.e., being aware of the content of the conversation in regard to the leader's belief and behavior. The coder thus has to be vigilant in retaining a holistic view of the entire conversation, while applying rigor to the coding of each individual behavior in the specified section for analysis. To address interrater agreement in-depth discussions were held with all authors throughout the process to resolve coding differences.

Findings

In this section we report on our findings regarding leaders' use of problem-solving behaviors in conversations with staff. This is followed by findings about the similarities and differences in leaders' behaviors between countries.

Leaders' behavior in problem-solving conversations

The main finding is a positive pattern of leaders' problem-solving behavior congruent with Model 2 values (see Table 2), which involves a more collaborative and open stance.

Approximately two-thirds of leaders from both countries engaged in some advocacy behavior and around half of the leaders displayed inquiry behaviors congruent with Model 2 values. A similar proportion of leaders demonstrated collaborative planning behaviors. We refer to these patterns as positive, as previous research has indicated the absence of such behaviors in leaders' conversations (Le Fevre & Robinson, 2015; Robinson et al., 2020) and the tendencies for leaders not to openly address problems (Yariv, 2006).

Few leaders engaged in behaviors in the third indicator of each dimension (Model 2 Indicator 1.3, 2.3, 3.3). The last indicators in each dimension can be seen as the most challenging as they involve an explicit critique of others' beliefs or the request of the other person to critique one's own beliefs. These behaviors are difficult as they aim at discovering differences and disagreements, however discussing such differences has the greatest potential to further a sustainable solution (Dewulf & Bouwen, 2012).

Similarly, leaders engaged the least in fostering shared responsibility (Model 2, Indicator 3.3) in the collaborative planning dimension. This demands leaders to discuss and agree on strategies to monitor problem resolution, thus creating accountability. Without such accountability, actions might not be implemented or if implemented, their effectiveness will not be assessed, thus problems might remain ineffectively addressed (Zaccaro et al., 2000).

There were instances where leaders displayed behaviors congruent with Model 1 values. Leaders seemed to retract to such behaviors most often when disclosing their own view (Indicator 1.1), providing grounds for their beliefs (Indicator 1.2), or planning next steps (Indicator 3.2). Previous research has shown that leaders tend to jump to solutions and 'quick fixes' in the belief that good leaders provide swift solutions (Robinson et al., 2020). Below we discuss our findings for each behavioral dimension, before comparing leaders' behavior patterns in the two countries.

Advocacy

Just over half of the leaders disclosed their beliefs about the problem (Indicator 1.1) and two thirds of them provided grounds for their beliefs (Indicator 1.2) in ways conducive to collaborative problem-solving (Model 2). For a third of the leaders, instances of disclosure (Indicator 1.1) were deemed incongruent with Model 2 values, as beliefs were stated as facts not leaving room for others to disagree, or disclosed indirectly, e.g., as

Table 2. Presence of leaders' problem-solving behavior (n = 35).

		Overall	
Dimension	Indicator	Model 2	Model 1
Advocacy	1.1 Discloses own problem belief	54% (19)	31% (11)
	1.2 Provides grounds for own problem belief	63% (22)	20% (7)
	1.3 Critiques other's point of view	11% (4)	6% (2)
Inquiry	2.1 Inquires into other's problem beliefs	60% (21)	31% (11)
	2.2. Checks for own understanding	69% (24)	9% (3)
	2.3 Explores other's reaction to own beliefs	40% (14)	6% (2)
Collaborative planning	3.1 Establishes common ground	49% (17)	11% (4)
	3.2 Collaboratively plans for next steps	60% (21)	40% (14)
	3.3 Fosters shared responsibility	20% (7)	6% (2)

Number in parentheses indicates number of leaders engaging in respective indicator.Due to coding of different behaviors across conversations, leaders could be counted in both categories.

a question or suggestion. The difference between these Model 1 and Model 2 behaviors can be seen in the following two quotes. First, leader NZ#24 described what he *sees* as the problem using perspectival language while being specific about the problem. He further provided reasoning for his belief (Model 2, Indicator 1.2).

> The concern I have around the sevens and eights at the moment is . . . I see there's a bit of gap between what you're doing and what K's doing. I have a concern about that because I want there to be a bit more commonality between not actually what you're doing context-wise, but what you're doing assessment-wise, so then we can make comparisons of progress across both classes that are consistent. (NZ#24)

In comparison, leader NZ#35 did not state her concern directly, but implied that the other's presentation for a meeting was not addressing key points. She used factual language when outlining her beliefs (Model 1), and did not provide reasoning for her concern other than references to roles and responsibilities. Her behavior left little room for checking both parties' beliefs, e.g., about the aim of the presentation. It thus showed little respect for the other person or their work and did not invite collaborative action.

> I need to, as a person coordinating this team, try to make sure that provision and support is getting into the right areas and that we're being as effective as we can. I guess I just need to check that your goal for the presentation is around supporting gifted and talented students, and that your presentation meets that goal, because that's what your role is. So if all of these things feed into that then that's great. (NZ#35)

Furthermore, leaders rarely engaged in a critical evaluation of others' beliefs, indicating agreement or disagreement with others' views or providing reasoning for their stance in an effective way (Indicator 1.3, Model 2). A rare example was leader NZ#47 who indicated his disagreement in a respectful and open manner.

> Can I just touch on that briefly, because I think that's where our views diverge . . . (NZ#47)

However, most leaders did not engage in such critical reflection. For example, NO#7 did not critically evaluate his own or the other's beliefs (Model 1). He, the principal, was concerned that the Department Head did not engage with his teachers effectively. There were complaints about the Department Head being distant and unapproachable, however the Department Head viewed his behavior as acceptable. The principal briefly noted his differing view, but then swiftly asked a leading question.

> I see. However, if we're concerned with policies and want to follow through with them, because we see that it means something to our students, then the question is, is that good enough? (NO#7)

Our analysis of the quality of leaders' behavior showed that their disclosure was often restricted to their beliefs about the problem nature and solutions. There was less focus on possible causes of the problem.

Inquiry

Almost two-thirds of leaders inquired into others' beliefs (Indicator 2.1) and on occasion more than two-thirds of leaders checked their understanding of these beliefs (Indicator 2.2) in concordance with Model 2 values, for example, Leader NO#6 in the following:

> The way I understand you, you envision that we do two or three meetings within six months and that the part of the meeting that we use for administration, I can send out in advance? And that I might put that in writing and ask them to read it, potentially comment on it when we start. And then we spend the rest of the time supporting each other professionally? (NO#6)

There was less evidence of leaders exploring others' reactions to their beliefs (Indicator 2.3). One example was the following leader who explicitly referred to his belief as an assumption and directly inquired into the other's reaction.

> I suppose I'm making an assumption and you can just check this for me, I'm assuming you felt comfortable in teaching the topic? (NZ#33)

Leaders' inquiries often elicited general information, e.g., about procedures or knowledge about specific strategies. We saw little evidence of deep inquiry into the reasoning behind others' beliefs, problem causes, or disagreements. There were only a few instances where inquiry was used to critically evaluate beliefs. Conversations often remained 'shallow', friendly exchanges that quickly sought agreement on seemingly easy, but potentially not sustainable, solutions. For example, the following leader asked a number of questions about the music teacher's focus on performance and feedback. However, he never inquired into the teacher's reasoning for her strategies, nor into his concern about falling student numbers in the department.

> How do you keep track of them during practical that they are all on task? . . . Do you, if they are halfway through practicing, do a performance? Do you get them to do it in front of the class? . . . Do they get written feedback on it? . . . Do they write like a reflection sometimes? (NZ#2)

Collaborative planning

Collaborative planning often occurred over a number of conversational turns. Thus, the identification of these behaviors during analysis needed to draw on more contextual information than on single utterances. A main indicator for Model 2 was planning next steps collaboratively, here leaders disclosed their own or inquired into others' beliefs about potential solutions (Indicator 3.2). One example is the following leader:

> What can we do that will get that focus more on teaching mathematics? We may not be able to change some of the things in terms of when big projects are due in other areas, but what things can we do that will help improve the situation in those classes?(NZ#94)

Even if solutions were disclosed by the leader or the other person and agreed on (Model 2, Indicator 3.1), there were fewer leaders who explored how to monitor progress to foster shared responsibility (Model 2, Indicator 3.3). Leader NZ#42 discussed actions for a struggling learner in the teacher's classroom, he noted agreement on next steps and set up a follow-up meeting, indicating his commitment to find a solution.

> . . . happy with that? (Teacher: Yep) So when we have our morning meeting on a Monday [. . .] after that meeting (Teacher: Yep) . . . we will come in here and we'll look at our timetable. That is when you can give me some feedback (Teacher: Yeah) . . . on what's not working. This child is really struggling [. . .] . . . we need to look at how we can better cater for them. (NZ#42)

Forty percent of leaders presented solutions in ways that did not invite others' views or involvement (Indicator 3.2, Model 1). An example of such behavior can be seen in the following conversation in which the leader set out next steps for the teacher.

> . . . you noticed the difference with the year twelve to the year eleven group; generally they are not as motivated. They are starting to set goals now which you think has worked well with your year eleven, so that's going to be a plan going forward, get them to set more goals . . . and then maybe have a strategy to do something different (teacher: yeah . . .) (leader interrupts) . . . so that we don't get the same results. We will try and stop that negative spin . . . . Thanks. (NZ#18)

The leader indicates the end of the conversation at in his speech segment by thanking the teacher. The teacher is hence left with little room to respond to the plan the leader has set out.

Comparison across contexts

A comparison of Norwegian and New-Zealand leaders revealed that New Zealand leaders engaged slightly more in behaviors in all three Model 2 behavior dimensions (see Table 3).

However, our findings also reveal a tendency for slightly more New Zealand leaders to engage in behaviors that did not demonstrate Model 2 values. Below we discuss our findings for each dimension offering a comparison of behavioral patterns for the two countries. Thus, New Zealand leaders seemed to engage more in the problem-solving process even if not always in effective ways.

Advocacy

Approximately two thirds of New Zealand leaders disclosed their beliefs and provided reasoning for them, while just around half of Norwegian leaders did so. However, New Zealand leaders seemed more likely to use behaviors demonstrating Model 1 values when

Table 3. Presence of leaders' problem-solving behavior in New Zealand and Norway.

		Model 2		Model 1	
Dimension	Indicator	New Zealand (n = 18)	Norway (n = 17)	New Zealand (n = 18)	Norway (n = 17)
Advocacy	1.1 Discloses own problem belief	61%(11)	47%(8)	44%(8)	18%(3)
	1.2 Provides grounds for own problem belief	67%(12)	59%(10)	28%(5)	12%(2)
	1.3 Critiques other's point of view	11%(2)	12%(2)	6%(1)	6%(1)
Inquiry	2.1 Inquires into other's problem beliefs	83%(15)	35%(6)	44%(8)	18%(3)
	2.2. Checks for own understanding	72%(13)	65%(11)	6%(1)	12%(2)
	2.3 Explores other's reaction to own beliefs	44%(8)	35%(6)	6%(1)	6%(1)
Collaborative planning	3.1 Establishes common ground	56%(10)	41%(7)	22%(4)	0%(0)
	3.2 Collaboratively plans for next steps	61%(11)	59%(10)	56%(10)	24%(4)
	3.3 Fosters shared responsibility	11%(2)	29%(5)	11%(2)	0%(0)

Number in parentheses indicates number of leaders engaging in respective indicator.
Due to coding behavior across leaders' conversations, leaders could be counted in both categories.

disclosing their beliefs. Unexpectedly, in these instances leaders tended to communicate their beliefs indirectly through questions or suggestions rather than stating beliefs directly. One example, is leader NZ#2, who was aware that student numbers are falling in the senior classes. Instead of disclosing his concern, he hinted at 'something in the data' and followed up with a question, leaving the teacher uncertain about the actual problem.

> [Faculty Head] has analysed our data and a few things popped up. So first of all I wanted to know how your seniors are going?(NZ#2)

Norwegian leaders in comparison seemed more direct in their approach. For example, this leader was not satisfied with how an oral exam was conducted. He disclosed his belief openly and checked with the other person.

> What I'm missing in the oral exam is a connection between the criteria listed here and the criteria you brought up in your dialogue with the student. Am I getting this right, or am I missing something? (NO#22)

There was little difference between leaders from the two countries in relation to the last indicator in this dimension – critiquing the other's point of view.

Inquiry

More New Zealand leaders showed inquiry behaviors than Norwegian leaders for all three indicators in this dimension (Model 2). However, as indicated above, we did not find many instances of deep inquiry, i.e. inquiry into the causes and the other's reasoning. The following leader provides a rare example of an inquiry unpacking the other's thinking.

> Can I just clarify what makes you think that they are lazy students? (NZ#89)

The leader in this case, discussing the teacher's classroom management, tried to unpack the teacher's beliefs about her students. The teacher had stated earlier that she felt her students 'have just been really lazy and more being rude'.

More New Zealand leaders used an open inquiry into others' beliefs (Indicator 2.1); however, they also had more instances that indicated inquiry congruent with Model 1 values. It is difficult to provide quotes, as the main problem lies within what the leaders did *not* do. Often, they moved on after disclosing their beliefs instead of actively asking for feedback from the other person. A Model 1 example is the following New Zealand leader who believes the teacher should use starter activities with his students, but instead of disclosing his beliefs and reasoning, he hints at them with a loaded question.

> Why do you think it might be important to have a starter activity? (NZ#21)

Collaborative planning

Slightly more New Zealand leaders showed behaviors that aimed to establish common ground (Indicator 3.1, Model 2). A similar pattern was evident for the second indicator – collaboratively planning next steps (Indicator 3.2, Model 2). However, again more New Zealand leaders tended to retract to Model 1 behaviors than Norwegian leaders, seemingly trying to establish their view and dictate the solution process.

For example, Leader NZ#33 showed behavior that could be seen as establishing common ground, however, he left no room for the teacher to respond or disagree. Thus, agreement was assumed and a solution dictated, congruent with Model 1 values, rather than collaboratively constructed. The leader ended his proposal with a 'loaded' question asking for agreement, however, it seemed clear what answer was expected.

> Well, seems we've got some kind of common ground at least, you recognise that there's two issues, I suppose I just want you to prioritise, what we're saying at this stage, I think you need to prioritise the collegiality, the professional responsibilities, I think prioritise those over, maybe some of the other things you feel are getting in the way and just keep working hard on the classroom management side of things, I mean, you'd agree that those two things are both priority and you're going to work on them moving forward? (NZ#33)

Norwegian leaders, in comparison, engaged more in Model 2 behaviors that 'foster shared responsibility' (Indicator 3.3). Leader NO#14 discussed student progress with a teacher asking for a follow up meeting.

> I think it is nice to have the meeting before we break for Christmas, so we have time to think about it, and let the ideas percolate. After Christmas we can roll up our sleeves and get to work about it (NO#14).

Discussion

This study makes several contributions to our understanding of educational leaders' problem-solving behavior in conversations with staff. Leaders from both New Zealand and Norway engaged in collaborative problem-solving behaviors in all three behavioral dimensions – advocacy, inquiry, and collaborative planning. We see these patterns positively, as previous research indicated the absence of such behavior in leaders' conversations (Le Fevre & Robinson 2015) and the tendency for leaders to avoid openly addressing problems (Yariv, 2006). However, we also noted that leaders struggled to demonstrate the full range of behaviors and there was limited evidence of the more challenging, but important, behaviors of offering and asking for critique of their own and others' views. These behaviors are important as missing to critically evaluate the beliefs that the solution finding process is based on, can lead to solutions that do not address the problem or are based on faulty reasoning (Argyris & Schön, 1974; Stanovich & West, 1997). Asking for critique of one's own views is an important behavior for leaders as subordinate staff might not voluntarily critique their superior's views. An invitation to do so might be needed to encourage an open discussion (See et al., 2011). These behaviors might be difficult as they deal with differences and disagreements. Yet examining differences has the greatest potential to strengthen the rigor of the solution-finding process (Dewulf & Bouwen, 2012).

Leaders rarely focused on setting up monitoring and accountability mechanisms. This is problematic because plans for actions without an agreed mechanism for follow-up and accountability on their implementation are not likely to be sustained (Zaccaro et al., 2000). Such surface-level problem-solving is likely to impact negatively, on the micro-level, on teaching and learning and, on the macro-level, on organizational improvement through fostering single- rather than double-loop learning (Argyris & Schön, 1974). This finding seems surprising given the current emphasis on evidence-based, collaborative

inquiry and problem-solving in the school improvement literature (e.g., Datnow & Park, 2014; Earl & Katz, 2002). However, it corroborates how challenging engaging in this behavior can be in practice.

There were subtle differences across countries. Slightly more New Zealand leaders engaged in collaborative problem-solving behaviors than their Norwegian counterparts. New Zealand leaders, however, also engaged more in Model 1 behaviors. Some differences were seen in the extent of leaders' openness, with New Zealand leaders being more indirect in their disclosure of beliefs and inquiry into others' beliefs, but more directive in proposing solutions. Potential explanations might lie in the hierarchical nature evident in New Zealand schools and the more collegial work environment apparent in Norway. Norway has been considered a late and reluctant reformer of accountability policies in schools (Christensen & Lægreid, 2008). Norwegian leaders have had little time to adjust to or internalize the idea of accountability and how one leads within such a framework. This may explain why Norwegian leaders showed less problem-solving behaviors in general, including behaviors indicating both Model 2 *and/or* Model 1 values.

There were also commonalities in problem-solving behaviors across contexts. For example, while leaders disclosed their beliefs and engaged in inquiry, their inquiry often seemed to lack depth. We observed a 'culture of niceness' (Elmore, 2007) in which beliefs were inquired into only on a surface-level and a lack of a deeper, critical discussion stood in the way of effective problem-solving consequently hindering the improvement in these schools (Meyer et al., 2017). Furthermore, conversations seemed characterized by what Earl et al. (2009) define as 'activity traps'. Leaders tended to briefly outline the problem before jumping to solutions, without spending much time discussing causes or underlying assumptions. These tendencies can be understood through the perspective of psychological closeness. Many leaders care about their staff and assume that honest disclosure might hurt them. Hence, they avoid real issues, hint at their beliefs, or ask leading questions, in the hope that staff themselves will understand what the problem is and how to solve it. The closer the relationship feels, the more difficult it may be to be completely transparent (Mencl & May, 2009).

Findings highlight the importance of examining not only the presence of behavior, but also behavior quality as there is a distinct difference between a general inquiry and an inquiry that elicits the reasoning and grounds that led to the belief. Inquiring deeply and critically evaluating own and others' beliefs is crucial to finding effective solutions (Mumford et al., 2017). Dewey (1933) emphasized the importance of judging what information is needed, should be ignored or revised before drawing conclusions. He noted that decisions should not be intuitive, but based on thorough judgment and testing 'of facts and suggestions as they present themselves, as well as of deciding whether the alleged facts are really facts and whether the idea is a sound idea, or simply a fancy' (p. 210).

In terms of implications for practice it seems that overarching and long-standing accountability policies impacted little on New Zealand educational leaders' behaviors. For effective collaborative problem-solving to become the 'norm', organizational cultures need to change from a 'culture of niceness' to one of openness and rigor (Meyer et al., 2017; Chrispeels & Gonzales, 2006). These shifts need to occur system-wide. For these shifts to occur time and space needs to be made for in-depth conversations and openness when it comes to failures and mistakes. Implications for policy include the need to

intentionally support development of the skills and behaviors needed by leaders and teachers on each level to engage in such conversations.

This study offers rare data on educational leaders' real problem-solving behaviors in conversations with staff. These are complex conversations imoacted by beliefs about existing and future relationship with staff members, organizational structures, values, and norms (Lu et al., 2015; Mencl & May, 2009). It has to be noted that this study examined a relatively small sample and participants' self-selected conversations and the researchers did not influence the focus or difficulty of the conversations participants engaged in. Further research could consider how a wider sample of conversations could be collected from a group of leaders to triangulate behaviors across different conversations. To differentiate further in terms of behavior quality between groups of leaders, a larger sample of leaders would be needed. Future research would also benefit from following up on problem-solving outcomes to fully test the effectiveness of different behavioral approaches. The future analysis of non-verbal cues might also extend our understanding of leaders' collaborative problem-solving.

Note

1. For the New Zealand census people can indicate more than one ethnicity. Hence, proportions sum to more than 100 percent.

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Appendix A. Codebook

Dimension	Indicator	Criteria – Model 2	Examples	Criteria – Model 2	Examples
Advocacy	1.1 Discloses own problem belief	Stating own belief about the nature, cause and/or solution of the problem	*I think/feel that there is an issue with … There might be a problem with how … I believe that …*	Factual language, indirect disclosure of belief, minimizing of beliefs	*The problem is …, Your practice is a concern …, We must deal with …*
	1.2 Provides grounds for own problem beliefs	Gives reasons, evidence, explanations, examples that led to own point of view	*What I observed was … I think this is a problem because …*	Presents the argument and conclusions drawn as the only truth	*The causes here are clear … It is unquestionable that …*
	1.3 Critiques other's point of view	Provides reasons for agreement or non-agreement with other's point of view	*I agree with the point that you are making about …, I understand the argument you are making and agree with you …, I disagree with your reasoning here because …*	Dismissal of other's beliefs without reasons, bypassing of other's beliefs	*'I am afraid that you are wrong … ' 'Yes, but … ' (returns quickly to own views), Yes, but that won't work, we should do … Yes, but the problem is …*
Inquiry	2.2 Inquires into other's beliefs	Asks for other's thinking or reasoning behind beliefs, asks for examples of observations or evidence	*How do you see the situation? What do you think about what I have just said … Would you agree or disagree with what I just said … What could I have missed … ? Why do you think that?*	Rebuts possible difference, loaded questions, encourages other to change current belief, restates own view or elaborates own view in response to difference	*You might have a different opinion but this is what the evidence says. Do you have a different view on this? It seems pretty straightforward what I explained.*
	2.2 Checks for understanding	Asks for clarification of the other person's thinking probes into any point of difference, paraphrases and checks	*So you are saying x, is that correct? The key points you mentioned are x and y, am I right? When you say that, what do you mean by that?*	questions that steer the conversation in a specific direction, loaded questions, does not leave time for other to answer answers the question him/herself	*Could you have other views on this problem? Don't you think we need more monitoring?*
	2.3 Explores other's reaction to own beliefs	Asks what the other person thinks about what has been said, probes into any point of difference	*What do you think about what I have just said …, Would you agree or disagree with what I just said … Do you think that is a correct observation … ? What did I miss?*	Rebuts possible difference, loaded questions, encourages other to change current belief, restates own view or elaborates own view in response to difference	*You might have a different opinion but this is what the evidence says …, Do you have a different view on this? It seems pretty straightforward what I explained.*

(*Continued*)

(Continued).

Dimension	Indicator	Criteria – Model 2	Examples	Criteria – Model 2	Examples
Collaborative planning	3.1 Establishes common ground	Identifies and/or checks for agreement on common ground	*I feel we agree that x is a problem … Do we agree that we need to look into y? Seems that we both think that …*	Assumes agreement without checking, uses agreement on an aspect of the conversation to push own solutions or beliefs	*We agree that x, so we need to act on that … We agree on that so then it is logical to do x*
	3.2 Collaboratively plans for next steps	Discloses own and/or inquires into other's beliefs about possible solutions OR checks for agreement on own solutions, involves other in decision-making about plans	*What could be possible next steps here? Who should look further into this? How should we find out the information needed? Will you draft it and I look further into how we can get it set up?*	Pushes own solutions by re-stating, ignoring other's suggestions for solutions, repeatedly elaborating on own solutions,	*We need to do x.* *The next step here is to do y.* *As I said before, we need to do x.*
	3.3 Fosters shared responsibility	Suggests and/or inquires into other's beliefs about monitoring strategies or checks agreement on own beliefs about strategies	*Should we meet again next week to check on progress? … When should we have this done? … How will we know that things have changed?*	Postulates monitoring steps without checking for agreement.	*Let's meet next week to check on the progress made … We re-test the kids in 6 weeks and check if they made any progress.*