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 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, 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 (Saiti, 2015).

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 (Authors, 2014; 2015a; Authors, 2015b, 2017, 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 behaviours 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' behaviour during problem-solving conversations about real issues. Our sample includes principals, deputy principals, and team leaders in secondary school contexts. The study focuses on behaviours 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 behaviour is likely to be influenced by such contextual factors and thus the comparison of leaders' problem-solving behaviour 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 behaviour 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, White; & Stephan, 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 teachers, 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 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' behaviour 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 relationship) can affect leaders' behaviour 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. 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 & Boetgger, 1989). Such behaviours 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 (Authors, 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 behaviour (e.g., Brenninkmeyer & Spillane, 2008; Leithwood & Steinbach, 1992; Mumford et al., 2000) to identify behaviours deemed effective in supporting collaborative problem-solving.

The ideas put forward on human behaviour in organizational learning (Argyris & Schön, 1974, 1978) guided our understanding on what effective problem-solving behaviour may look like. Specifically, how the values and beliefs an individual holds influences their behaviour. 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' behaviour 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 highlight 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 behaviours 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 behaviour 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 behaviours conducive to effective problem-solving (Mencl & May, 2009; Yariv, 2006).

Three behavioural 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).

Behaviours 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 behaviours *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 (Author, 2015). Open and respectful inquiry is more likely to elicit an intrinsic commitment to problem-

solving, where behavioural change is rooted in a shared understanding of the problem (Deci & Ryan, 2008; Kuvaas, Buch, & Dysvik, 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 behavioural change (Gagne & Deci, 2005).

The Impact of Culture

Culture influences people's value and belief systems, behavioural rules and norms, and the way they talk (Carpara & Cervone, 2000; Hofstede, 2001). Language is both a behavioural 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 behaviour in Japan and New Zealand, Hannah (2014) observed that behaviours appeared outwardly similar across countries, but that they were underpinned by different cultural realities. Similarly, Lehmann-Willenbrock et al. (2014) explored different problem-solving behaviours 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 behaviours 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 behaviours. In the next sections, we note similarities and differences in the educational systems that might influence leaders' behaviour in each country. We in particular note the focus on accountability in and of 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%) (Udir, 2018). Each school has a principal and, depending on school size, assistant principals and/or department leaders (Udir, 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, Cosslett, & Burgon, 2016). Schools, principals, and teachers are highly autonomous relative to education systems globally (Hanushek, Link, & Woessmann, 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

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

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 principal. Reforms in the late 1980s have placed schools and principals more and more at the forefront of accountability measures, with structures around 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 for outcomes (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 behaviours. We examine and then compare leaders' behaviours in problem-solving conversations in both Norway and New Zealand.

Two research questions guided this study:

- What collaborative problem-solving behaviour do leaders use in problem-solving conversations with staff?
- What are similarities and differences in leaders' behaviours 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 – their conversations with stuff. Our research thus encompasses case studies of Norway 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.

[Insert 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 course to provide baseline data regarding leaders' behaviour. 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, these data were not within the scope of this study. This study focussed on the baseline data of leader performance prior to any intervention. Leaders analysed their conversations as part of the course to learn about their own behaviour and how they could improve. These analyses were not used for this research. 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 behaviour, or teaching practice. Conversations differed in length so to ensure comparability, our analysis focused on one section of the transcript that centred 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 behaviours as outlined in our theoretical framework (see Appendix A). This was revised from a previous study (Authors, 2020). For each of the behavioural dimensions - advocacy, inquiry, and

collaborative planning - we described three behavioural 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 behaviour demonstrates Model 1 or Model 2 values.

To establish agreement on behavioural 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, Marshall, & McCulloch, 2011).

To answer the first research question 'What behaviour 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 behavioural indicators and patterns of presence/absence of behaviours. We thus coded whether leaders had one or more instances of a behaviour. We examined presence/absence as high frequency of a behaviour would not necessarily indicate an improvement in conversation quality. Leaders could enact behaviours 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 behaviours 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 behaviours across transcripts. Behaviours meeting the coding criteria differed in quality. We explored these differences because behaviour quality is likely to impact the quality of the discussion and problem examination. However, categorising behaviour 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' behaviours across the two countries. It has to be noted that the analysis of specific behaviours in problem-solving conversations has a holistic component, in that the coding of a behaviour often has to take into account the context, content, and previous behaviours 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 behaviour to a belief previously disclosed in the conversation by the leader, i.e., being aware of the content of the leader's belief and behaviour. 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 behaviour 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 behaviours in conversations with staff. This is followed by findings about the similarities and differences in leaders' behaviours between countries.

Leaders' Behaviour in Problem-Solving Conversations

The main finding is a positive pattern of leaders' problem-solving behaviour 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 behaviour and around half of the leaders displayed inquiry behaviours congruent with Model 2 values. A similar proportion of leaders demonstrated collaborative planning behaviours. We refer to these patterns as positive, as previous research has indicated negative outcomes from

the absence of such behaviours in leaders' conversations (Author, 2015, 2020) and the tendencies for leaders not to openly address problems (Yariv, 2006).

[Insert Table 2.]

Few leaders engaged in behaviours 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 behaviours are difficult as they aim at discovering differences and disagreements, however discussing such differences has the greatest potential to further a sustainable solution (Dewulf & Bowen, 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 behaviours congruent with Model 1 values. Leaders seemed to retract to such behaviours 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 (Authors, 2020). Below we discuss our findings for each behavioural dimension, before comparing leaders' behaviour 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 a question or suggestion. The difference between these Model 1 and Model 2 behaviours 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 is 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 behaviour 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 behaviour 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' behaviour 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 actually 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 behaviours 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 behaviour 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 behaviours in all three Model 2 behaviour dimensions.

[Insert Table 3.]

However, our findings also reveal a tendency for slightly more New Zealand leaders to engage in behaviours that did not demonstrate Model 2 values. Below we discuss our findings for each dimension offering a comparison of behavioural patterns for the two countries.

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 behaviours demonstrating Model 1 values when 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 behaviours 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 2 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 behaviours 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). More

New Zealand leaders tended to retract to Model 1 behaviours than Norwegian leaders, seemingly trying to establish their view and dictate the solution process.

For example, Leader NZ#33 showed behaviour 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 behaviours 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 behaviour in conversations with staff. Leaders from both New Zealand and Norway engaged in collaborative problem-solving behaviours in all three behavioural dimensions – advocacy, inquiry, and collaborative planning. We see these patterns positively,

as previous research indicated the absence of such behaviour in leaders' conversations (Authors, 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 behaviours and there was limited evidence of the more challenging, but important, behaviours of offering and asking for critique of their own and others' views. These behaviours 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 behaviour 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, Morrison, Rothman, & Soll, 2011). These behaviours 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 & Bowen, 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 (Datnow & Park, 2014; Earl & Katz, 2002). However, it corroborates how challenging engaging in this behaviour can be in practice.

There were subtle differences across countries. Slightly more New Zealand leaders engaged in collaborative problem-solving behaviours than their Norwegian counterparts.

New Zealand leaders, however, also engaged more in Model 1 behaviours. 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 behaviours in general, including behaviours indicating both Model 2 *and/or* Model 1 values.

Commonalities in problem-solving behaviours 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 (Authors, 2017). Furthermore, conversations were seemed characterized by what Earl, Katz and Ben Jafaar (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 behaviour, but also behaviour 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 judgement 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' behaviours. For effective collaborative problem-solving to become the 'norm', organisational cultures need to change from a 'culture of niceness' to one of openness and rigour (Authors, 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 behaviours needed by leaders and teachers on each level to engage in such conversations.

This study offers rare data on educational leaders' real problem-solving behaviours in conversations with staff. These are complex conversations wherein existing and future relationship with staff members, organisational structures, values and norms (Lu, Jiang, Yu, & Li, 2015; Mencl & May, 2009). This study examined a relatively small sample and participants self-selected conversations. 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

behaviours across different conversations. To differentiate further in terms of behaviour quality between groups of leaders, a larger sample of leaders is also needed. Future research would benefit from following up on problem-solving outcomes to fully test the effectiveness of different behavioural approaches. The future analysis of non-verbal cues might also extend our understanding of leaders' collaborative problem-solving.

References

Authors (2014).

Authors (2015a).

Authors (2015b).

Authors (2017).

Authors (2020).

Argyris, C. & Schön, D. (1974). *Theory in practice: Increasing professional effectiveness.* Jossey-Bass.

Argyris, C., & Schön, D. (1996). *Organizational learning II: Theory, method and practice.* Addison Wesley.

Allison, D.J., & Allison, P.A. (1993). Both ends of a telescope: Experience and expertise in principal problem solving. *Educational Administration Quarterly, 29*(3), 302-322.

Bambacas, M., & Patrickson, M. (2008). Interpersonal communication skills that enhance organisational commitment. *Journal of Communication Management*, *12*(1), 51-72.

Borman, K.M., Clarke, C., Cotner, B., & Lee, R. (2006). Cross-case analysis, in J.L. Green, G. Camilli, and P.B. Elmore (Eds.), *Handbook of Complementary Methods in Education Research* (pp. 123-139), Routledge.

Brenninkmeyer, L.D., & Spillane, J.P. (2008). Problem-solving processes of expert and typical school principals: A quantitative look. *School Leadership and Management, 28*(5), 435-468.

Bryk, A.S., Gomez, L.M., Grunow, A., & LeMahieu, P.G. (2015). *Learning to improve: How America's schools can get better at getting better*. Harvard Education Press.Cameron, C.D., Hutcherson, C.A., Ferguson, A.M., Scheffer, J.A., Hadjiandreou, E., & Inzlicht, M. (2019). Empathy is hard work: People choose to avoid empathy because of its cognitive costs. *Journal of Experimental Psychology-General, 148*(6), 962-976.

Christensen, T., & Lægreid, P. (2008). NPM and beyond: Structure, culture and demography. *International Review of Administrative Sciences*, 74(1), 7–23Clarke, S., & O'Donoghue, T. (2017). Educational leadership and context: A rendering of an inseparable relationship. *British Journal of Educational Studies, 65*(2), 167-182. doi:10.1080/00071005.2016.1199772

Deci, E.L., & Ryan, R.M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology, 49*(1), 14-23.

DeCuir-Gunby, J.T., Marshall, P.L., & McCulloch, A.W. (2011). Developing and using a codebook for the analysis of interview data. *Field Methods*, 23(2), 136-155.

Dempster, N., & Berry, V. (2003). Blindfolded in a minefield: Principals' ethical decision making. *Cambridge Journal of Education, 33*, 457-477.

Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process.* Heath and Company.

Dewulf, A. & Bouwen, R. (2012). Issue framing in conversations for change: Discursive interaction strategies for "doing differences". *The Journal of Applied Behavioral Science, 48*(2), 168-193.

Earl, L.M., Katz, S., & Ben Jaafar, S. (2009). *Building and connecting learning communities: The power of networks for school improvement*. Corwin Press.

EACEA (2018). *National Policies Platform*. Retrieved from https://eacea.ec.europa.eu/national-policies/en/content/youthwiki/6-education-and-training-norway

Elmore, R. (2007). Professional networks and school improvement. *School Administrator*, *64*(4), 20-24.

Gagne, M., & Deci, E.L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26*(4), 331-362Hanushek, E. A., Link, S., & Woessmann, L.

(2013). Does school autonomy make sense everywhere? Panel estimates from PISA. *Journal of Development Economics*, *104*, 212-232.

Hare, W. (2003). The ideal of open-mindedness and its place in education. *Journal of Thought, 38*(2), 3-10. Hatch, T. (2013). Beneath the surface of accountability: Answerability, responsibility and capacity-building in recent education reforms in Norway. *Journal of Educational Change*, 14(2), 113–138.

Heifetz, R. A., Heifetz, R., Grashow, A., & Linsky, M. (2009). *The practice of adaptive leadership: Tools and tactics for changing your organization and the world*. Harvard Business Press.

Hofstede, G. (2001). *Culture's consequences: International differences in work-related values*. Sage.

Kuvaas, B., Buch, R., & Dysvik, A. (2016). Performance management: Perceiving goals as invariable and implications for perceived job autonomy and work performance. *Human Resource Management, 55*(3), 401-412.

Lehmann-Willenbrock, N., Allen, J.A., & Meinecke, A.L. (2014). Observing culture: Differences in US-American and German team meeting behaviors. *Group Processes & Intergroup Relations*, *17*(2), 252-271.

Leithwood, K. A., & Stager, M. (1989). Expertise in principals' problem solving. *Educational Administration Quarterly*, *25*(2), 126-161.

Leithwood, K., & Steinbach, R. (1992). Improving the problem solving expertise of school administrators. *Education and Urban Society, 24*(3), 317-345.

Leithwood, K., & Steinbach, R. (1995). *Expert problem solving: Evidence from school and district leaders*. State University of New York Press.

Lu, J., Jiang, X., Yu, H., & Li, D. (2015). Building collaborative structures for teachers' autonomy and self-efficacy: The mediating role of participative management and learning culture. *School Effectiveness and School Improvement*, *26*(2), 240-257.

Mencl, J., & May, D.R. (2009). The Effects of proximity and empathy on ethical decision-making: An exploratory investigation. *Journal of Business Ethics, 85*(2), 201-226.

Ministry of Education (2007). *Improving school leadership: Country background report for New Zealand.* OECD Publishing.

Morrison, E.W., & Rothman, N.B. (2008). Silence and the dynamics of power. In J. Greenberg & M. S. Edwards (Eds.), *Voice and silence in organizations*. Emerald.

Mumford, M.D., Todd, E.M., Higgs, C., & McIntosh, T. (2017). Cognitive skills and leadership performance: The nine critical skills. *The Leadership Quarterly, 28*(1), 24-39.

Mumford, M.D., Zaccaro, S.J., Harding, F.D., Jacobs, T.O. & Fleishman, E.A. (2000). Leadership skills for a changing world: Solving complex social problems. *The Leadership Quarterly 11*(1), 11-35.

Nickles, T. (1981). What is a problem that we might solve it? *Synthese, 47*(1), 85-118.

OECD (2013). *PISA 2012 results: Excellence through equity: Giving every student the chance to succeed* (Vol. 2). OECD Publications.

OECD (2016a). *New Zealand: Education at a glance.* OECD Publications.

OECD (2016b). *Norway*: *Education at a glance.* OECD Publications.

Ochs, E. (1986). Introduction in B.B. Schieffelin & E. Ochs (Eds.) *Language socialization across cultures* (No. 3). Cambridge University Press.

Ogle, L., Sen, A., Pahlke, E., Jocelyn, L., Kastberg, D., Roey, S., & Williams, T. (2003). *International comparisons in fourth grade reading literacy: Findings from the Progress*

in International Reading Literacy Study (PIRLS) of 2001. US Government Printing Office.

Quaquebeke, N.V., & Felps, W. (2018). Respectful inquiry: A motivational account of leading through asking questions and listening. *Academy of Management Review*, 43(1), 5-27

Robertson, J., & Hill, M. F. (2016). Aotearoa New Zealand: Examining the challenges of educational accountability policies and exploring possibilities for school leadership. In J. Easley and P. Tulowitzki (eds.) *Educational Accountability* (pp. 34-49). Routledge.

Robinson, V.M.J. (1995). Organisational learning as organisational problem-solving. *Leading & Managing, 1*(1), 63-78.

Robinson, V. M., Lloyd, C. A., & Rowe, K. J. (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly*, *44*(5), 635-674.

Saiti, A. (2015). Conflicts in schools, conflict management styles and the role of the school leader: A study of Greek primary school educators. *Educational Management Administration & Leadership 43*(4), 582-609.

See, K. E., Morrison, E. W., Rothman, N. B., & Soll, J. B. (2011). The detrimental effects of power on confidence, advice taking, and accuracy. *Organizational Behavior and Human Decision Processes*, *116*(2), 272-285.

Spiegel, J.S. (2012). Open-mindedness and intellectual humility. *Theory and Research in Education, 10*(1), 27-38.

Spillane, J.P., White, K.W., & Stephan, J.L. (2009). School principal expertise: Putting expert-aspiring principal differences in problem solving processes to the test. *Leadership and Policy in Schools, 8*(2), 128 - 151.

Stanovich, K.E., & West, R.F. (1997). Reasoning independently of prior belief and individual differences in actively open-minded thinking. *Journal of Educational Psychology*, *89*(2), 342.Tangirala, S., & Ramanujam, R. (2012). Ask and you shall hear (but not always): Examining the relationship between manager consultation and employee voice. *Personnel Psychology, 65*(2), 251-282.

Tetlock, P.E., & Boettger, R. (1989). Accountability: A social magnifier of the dilution effect. *Journal of Personality and Social Psychology, 57*(3), 388-398.

Timperley, H. (2015). *Professional conversations and improvement-focused feedback: A review if the research literature and the impact on practice and student outcomes.* Australian Institute for Teaching and School Leadership.

Tjosvold, D. (2008). The conflict-positive organization: It depends upon us. *Journal of Organizational Behavior, 29*(1), 19-28.

Torelli, C.J., & Shavitt, S. (2010). Culture and concepts of power. *Journal of Personality and Social Psychology*, *99*(4), 703.

Tschannen-Moran, M. (2014). *Trust matters: Leadership for successful schools.* John-Wiley & Sons.

Udir (2018). *Statistics on Norwegian education*. Retrieved from https://www.udir.no/tall-og-forskning/statistikk/

Warner-Søderholm, G. (2012). Culture matters: Norwegian cultural identity within a Scandinavian context. *Sage Open*, *2*(4), 1-12.

Wylie, C., Cosslett, G., & Burgon, J. (2016). New Zealand principals: Autonomy at a cost. In H. Ärlestig, C. Day & O. Johansson (Eds.). *A decade of research on school principals* (pp. 269-290). Springer.

Yariv, E. (2006). Mum effect: Principals' reluctance to submit negative feedback. *Journal of Managerial Psychology 21*(6), 533-546.

Yin, R. K. (2018). Case study research and applications: Design and methods (6th Ed.). Sage.

Zaccaro, S.J., Mumford, M.D., Connelly, M.S., Marks, M.A., & Gilbert, J.A. (2000). Assessment of leader problem-solving capabilities. *The Leadership Quarterly, 11*(1), 37-64.

Zand, D.E. (2016). Reflections on trust and trust research: Then and now. *Journal of Trust Research*, (6)1, 63-73.