Leading school improvement through goal-setting:

Evidence from New Zealand schools

Introduction

To create a focus on improvement and more equitable outcomes, principals in most

jurisdictions are tasked with setting school improvement goals as part of annual and strategic

planning processes (Bryk et al., 2015; DuFour and Mattos, 2013). However, while the value

of vision and direction-setting in schools is widely evidenced (e.g. Hallinger, 2005; Robinson

& Gray, 2019), these strategic planning and goal-oriented accountability systems have been

criticized as being too "rational" in assuming a direct relationship between organizational

goals, staff behavior, and outcomes (Hallinger and Heck, 2002; Mintzberg, 1994). While

studies have shown that leaders' goal-setting has a significant, albeit indirect, impact on

student achievement, these studies tend to examine goal-setting as a small aspect of larger

improvement frameworks or models (e.g. Bryk et al., 2010; Favero et al., 2016; Newmann et

al., 2001; Robinson et al., 2008; Sun and Leithwood, 2015). These studies have mainly used

quantitative, cross-sectional procedures to test their models and have pointed to the different

aspects of goal-setting, first, setting clear and narrowly focused goals, and, second, the

translation of these goals into staff behavior which needs to be viewed as a longer term

collaborative process (Hallinger and Heck, 2002). Studies have often focused on outcomes

more than the examination of implementation processes. Such examinations are however

important if we are to implement improvements in different contexts and systems (Lewis,

2015). Hence, what might be missing is a more finely honed focus on how leaders set goals,

decide on, and justify goals and improvement strategies and work with staff to achieve them

over time, i.e., how they implement the improvement cycle once goals are set. The present

study reports on a two-year collaborative research project, which closely examined three

principals' goal-setting and goal pursuit practices in their schools. It documents principals' and staff's efforts to improve equity in outcomes through detailed case studies.

Literature review

Several studies have examined goal setting in large scale studies as part of wider leadership frameworks or models. Only a few studies have focussed specifically on principals' goal-setting practices, which are reviewed here. We later turn to the larger context of empirical and theoretical research about goal-setting (e.g. Locke and Latham, 1990, 2019) and school improvement (e.g. Bryk et al., 2010; Conzemius and Morganti-Fisher, 2012; Fullan, 2006; Lewis, 2015) with the latter being closely linked to principals' collaborative work with staff. This collaborative work of translating goals into changes in staff behaviour and ultimately school outcomes is the focus of our reserach.

A set of studies have focused specifically on principal goal-setting utilising surveys to examine goal content, achievement and factors impacting achievement, e.g. principal commitment, challenge, effort, learning required, and support. Sinnema and Robinson (2012) focused on a sample of 72 experienced principals during their performance evaluation. Their goals mainly focused on improvement of instruction and outcomes and were often only partially achieved after six months. Goals focusing on strategic planning and resourcing – areas in which principals could exert more direct influence – were more likely to be achieved. Interestingly, although principals were experienced and reported high goal commitment, they rated their capacity to achieve them as insufficient.

Authors (2019) employed a similar research design following 460 novice principals to examine goal achievement after 18 months in the role. The study drew on principals' improvement plans, their self-evaluation surveys, and reports from their mentors. They found that goal achievement tended to be high, but in contrast to what goal-setting theory suggests, goal challenge was a negative predictor of achievement. A qualitative analysis of two

2

contrasting cases revealed principals' self-efficacy in the role as a potential explanation for this negative relationship.

In addition, a study investigating middle and senior leaders' goal knowledge and perceptions of improvement in 33 New Zealand high schools showed that principals often set unspecific goals and too many targets (Authors, 2020). As a result, senior and middle leaders were generally unable to recall their goals at the end of the year and schools struggled to keep a sustained focus over the course of the year. Only schools in which both middle and senior leaders had adequate goal knowledge, saw progress in their improvement agenda.

An area that needs further attention is the close examination of principals' practices used in pursuit of their goals. Studies cited earlier do not detail the actions, beliefs, and conundrums of principals driving improvement efforts. For example, Bryk et al. (2010) describe in detail the steps to attain improvement and argue that a key cause of failure is linked to a lack of focus on "high-leverage processes" (p.47). But the realities of how that is experienced in a school is not a focus of their work. Similarly, DuFour and Mattos (2013) argue that improvement is not attained by micromanaging teachers' moves in the classroom, but rather by creating a "school-wide focus on learning both for students and the adults who serve them" (p.40). However, detailed information about how principals might engage in processes to enable these "high-leverage processes" and "school-wide focus" are not specifically addressed. An important contribution to the existing empirical literature is therefore a more in-depth understanding of principals' goal-setting and goal pursuit practices in the complex environments of their schools; the research question guiding this study was hence: How can principals lead goal-setting effectively to improve equity in student outcomes?

Theoretical framework

While in-depth studies of principal goal-setting are missing from the literature, we draw on empirical and theoretical research about goal-setting from the management (e.g. Locke and Latham, 1990, 2019) and school improvement literature (e.g. Bryk et al., 2010; Conzemius and Morganti-Fisher, 2012; Favero et al., 2016; Fullan, 2006; Langley, 2009; Lemire et al, 2017; Lewis, 2015) to highlight goal-oriented practices that are deemed important in the pursuit of more equitable student outcomes. They include: setting few, specific, and clear goals; close monitoring of progress; implementing few and focused improvement strategies that align to the goal; and creating collective responsibility for goal achievement.

First, effective goal-setting has been characterized by creating few, specific, and clear goals. They provide a narrow focus in teachers' and principals' day-to-day work that is laden with potential problems and distractions (Favero et al., 2016; Fullan, 2006; Robinson & Grey, 2019). Goals can define the direction of improvement a school is taking (e.g. improve equity in outcomes). Goals are often accompanied by measurable targets indicating the level of achievement to be reached within a given timeframe for the whole school, in a specific subject, or for a group of students. Locke and Latham (2019) note that too many targets can dilute the focus and disperse efforts, while vague and unclear targets can create ambiguity about expectations. Furthermore, goals need to be perceived as achievable. Challenging goals can lead to greater effort, focus, and persistence, but only if staff feel they have, or can gain, the capability to achieve them (Locke and Latham, 2019).

Goal-setting theory highlights the importance of goals being justified and communicated in ways that ensure staff develop commitment and collective responsibility for the goals (Bryk et al., 2010; Conzemius and Morganti-Fisher, 2012; Locke and Latham, 2013a). If staff are to be committed to goals, they need to feel supported in their efforts to

4

pursue those (Authors, 2020). Comparing the results of other schools and regularly examining the performance of different student sub-groups within the school helps build this commitment and collective responsibility (Chenoweth, 2007; Knapp and Feldman, 2012). The commitment of middle leaders is seen as particularly important, as they work with teachers translating strategies into changes in classroom practice and creating accountability for results in teams and departments (Hofman et al., 2001; Little, 2002).

Second, close monitoring and regular feedback on progress in relation to the goals is emphasized as one of the most important features of effective goal pursuit (Bryk et al., 2015; Langley, 2009; Lemire et al., 2017; Lewis, 2015; Locke and Latham, 2013b). Monitoring is enabled by using practical tools measuring key elements of the theory of change (Lewis, 2015). Feedback allows staff to gauge progress, adapt their strategies and adjust their level of effort. Feedback can also highlights areas where support is needed. This focus on development is important so that teachers move away from justifying poor results, and concentrate on adjusting and developing their teaching strategies (Timperley, 2005). Feedback creates a sense of accomplishment if efforts are successful, and a sense of urgency if progress is not evident. Both can result in heightened effort (Locke and Latham, 2013b; Murphy, 2013). However, goal monitoring must be embedded into school activities, routines, and norms rather than just espoused (Bryk et al., 2010; Langley et al., 2009; Lemire et al, 2017; Timperley, 2005). Furthermore, improvement is more likely when the importance of goals, the strategies to achieve them, and their alignment and progress is highlighted throughout the year. Timperley (2005) found schools that were improving emphasized clear expectations and had regular and scheduled monitoring meetings and professional learning conversations. In these schools, the goal focus was evident in teacher conversations and in materials and artifacts used to support these interactions.

School improvement is more likely if there are few and focused improvement strategies aligned to the goal (Bryk et al., 2010; Langley et al., 2009; Lemire et al, 2017; Lewis, 2015; Timar and Chyu, 2010). Clear alignment between goals and strategies impacts staff's commitment, as knowing how the school is aiming to achieve the goal can be critical to their acceptance of, and commitment to, the goal (Authors, 2020; Bryk et al., 2010; Newmann et al., 2001). Improvement strategies can include changes in organizational structures and routines, professional learning, and changes to instructional or curricular practices. These strategies align to the integration of basic disciplinary knowledge and the profound general and organization-specific knowledge of implementation discussed in the science of improvement literature (Lewis, 2015). Indeed, strategies need to be closely aligned to the feedback gained on student progress. Goal and strategy alignment leads to clarity in where to allocate time and resources to establish and embed practices and routines across the school (Newmann et al., 2001; Stringfield et al., 2008).

Finally, collective responsibility is described as "teachers' willingness to take responsibility for the learning of their students… [it becomes] a property of schools" (Lee and Smith, 1996: 110). Collective responsibility includes a sense of shared norms "that influence how teachers enact their daily instruction and engage with colleagues" (Bryk et al., 2010: 24). There is some debate as to whether collective responsibility is impeded by formal controls such as structures and procedures, but almost universal agreement that it is improved through informal controls such as shared values and norms (Forsyth et al., 2011; Knapp and Feldman, 2012). Lewis (2015: 55) observed that there is little research that examines the building of staff's "understanding of the problem and its causes, buy-in to improvement, identification of improvement ideas within and outside their organization, and rapid testing of promising ideas". However, the success of improvement has been noted to hinge on organizational knowledge-building and ownership (Langley et al., 2009; Lewis, 2015).

In summary, goals are important in enabling concentrated collective effort in a prioritized area of need. Well-justified goals create staff commitment and close monitoring of progress towards the goal provides the necessary feedback to maintain focus, commitment, and collective responsibility. Explicit alignment of improvement strategies to goals reduces fragmentation and increases coherence across schools' activities. This focused work thereby leads to organizational practices that result in more focused, specific, and consistent teaching practices in classrooms. In turn, these benefit student learning and improve equity in outcomes.

Method

The research context, improvement project, participating schools, and data collection and analysis are presented next.

Research context

In New Zealand, schools are legally required to have annual plans outlining school-wide goals, achievement targets, and improvement strategies. In high schools, which typically cater for 13 to 18-year-olds, targets often focus on increasing the percentage of students gaining University Entrance (UE) and the National Certificate of Educational Achievement (NCEA) – at levels 1, 2 and 3 (typically the last three years of schooling, 16-18 year-olds) (Madjar and McKinley, 2011). NCEA is a standards-based, criterion-referenced system in which students gain a certain number of credits for meeting a particular subject standard. At NCEA level 3, students can qualify for University Entrance (UE) if they attain prerequisite credits in certain subjects. In elementary schools, which typically cater for 5 to 12-year-olds, targets frequently focus on increasing the percentage of students achieving certain curriculum levels measured in the form of Overall Teacher Judgements (OTJs). OTJs represent a

judgement of student performance in relation to the standard expected of their year level nationally: well below, below, at, or above standard.

Improvement project

The project examined in this research was a two-year collaboration between three researchers and the principals of three schools aimed at improving equity in student outcomes through improving schools' goal-setting and goal pursuit practices. Principals used a practitioner inquiry approach, similar to an action research cycle (Timperley et al., 2014) or plan-do-study-act (PDSA) cycle (Langley et al., 2009) to address constraints identified in an initial assessment and improve their goal-pursuit practices accordingly. Principals worked with one or more middle or senior leaders and one or more teachers as an inquiry team of three to six members, as research indicates that a cohesive team effort from senior and middle leaders is required to progress improvement (Bryk et al., 2015; Hofman et al., 2001). The same three school teams participated in the project over two years and attended seven half-day workshops facilitated by the researchers that focused on goal-setting, problem-solving, and planning next steps. Workshops enabled within- and across-school discussion, support, and feedback. Schools were further supported by the researchers through in-school problem-solving sessions and observations of and feedback on school meetings.

Project schools

The project involved one elementary and two high schools. The principals were in their second or third year at their schools and each noted that their schools required significant shifts in outcomes for specific groups of students. Goodall Elementary (pseudonym) had a large number of students with special needs in regard to behavior. It was situated in a high socio-economic area, catering for approximately 450 students of which the majority were Asian (34%) with English as a Second Language. The high schools had large numbers of

minority students from low socio-economic areas. Curie High (pseudonym) enrolled approximately 1400 students with 24% identifying as indigenous Māori and 43% as of Pacific Island descent. Rubin High (pseudonym) enrolled approximately 700 students with 80% identifying as of Pacific Island descent and 15% as Māori. Nationally, New Zealand European account for 47%, Māori for 24%, Asian for 14%, and students of Pacific Island descent for 10% of the student population (Education Counts, 2020). Only the principal of Curie High had previous experience as a principal; serving ten years in another high school prior to coming to Curie. The other two principals had extensive experience as deputy principals prior to their principalship appointments. All three principals had completed Master degrees in educational leadership.

Data collection

Multiple sources of data were collected to create a case study of each school. We carried out semi-structured interviews with principals for an hour at the beginning (BOP), middle (MOP) and end of the project (EOP), and with five staff, including senior and middle leaders and teachers, at each school at BOP and EOP for half an hour, which provided a range of perspectives on each school's goal-setting practices. Interviews were audio-recorded and transcribed for analysis. We also audio-recorded and transcribed discussions at the seven workshops attended by school teams. We further collected notes from school meeting observations and workshop artifacts including self-evaluation rubrics and action plans. Observations of school meetings served to provide feedback to middle and senior leaders on their facilitation and leadership as well as to record notes on how problems were discussed and analyzed, how data were used, and how goals and strategies were communicated. No specific observation schedule was used. We collected schools' strategic plans, annual principals' reports, and audit reports from the Education Review Office which monitors school performance.

Data analysis

All qualitative data were uploaded into NVivo for case coding and cross-case analysis. Each author coded the collated evidence for one of the three schools and wrote a 10-15 page, detailed case at the beginning of the project (BOP) in regard to the nature and quality of goal-setting. We noted goal-setting practices and constraints in each school and, through a cross-case analysis, identified common themes across schools (Borman et al., 2006). The accuracy of the cases was checked by: all three researchers, who were familiar with primary data from all schools; the principals; and finally school teams during the first workshop. At the end of the project (EOP) case analyses were repeated, taking into account changes over time and leadership practices implemented in the two years. The cases were again checked by all researchers and the cases and cross-case analyses with principals. Analyses were guided by the theoretical framework outlining four key overarching goal-setting practices: providing goal focus; enabling goal monitoring; creating collective responsibility; and increasing capabilities through professional learning. Further in-depth analysis explored how these practices were enacted in the schools to ascertain links between these practices and schools' own ratings of effectiveness on evaluation rubrics as well as changes in student achievement outcomes. Through the in-depth analysis further sub-themes were noted in regard to these key practices, e.g. data on goal monitoring were further coded into two themes: 'embedding data monitoring in structures and routines' and 'making priority students visible' (Braun and Clarke, 2012; Terry et al., 2017). Themes were agreed upon by all authors after discussion of initial coding at BOP and reviewed after data familiarization at EOP.

School achievement data were analyzed to identify whether schools had made improvement from the year prior to the project to EOP. For the high schools, achievement data were examined in view of pass rates in UE and NCEA with a focus on improving outcomes for Māori and Pasifika students in comparison with other students. For the

elementary school, OTJ data were examined in view of the proportions of students achieving 'at' or 'above'. A special focus was on boys' writing due to existing gender-based disparities. The analysis of schools' achievement data is not presented here in full, given the scope and focus of the paper, but was used to inform the case analyses.

Findings

First we describe the schools' goals and progress in creating more equitable outcomes, and their self-evaluation of goal-setting practices. We then present our cross-case findings related to the four key practices: providing clear goals; enabling goal monitoring; increasing capabilities through professional learning; and creating collective responsibility.

School goals and progress

Two schools improved equity of outcomes over the two years. Curie High focused on school-wide targets of 90/90/85 for NCEA Level 1-3 (i.e. percentages of students achieving at each level) throughout the project. While they did not achieve these targets in each level each year, achievement was markedly higher than in previous years, and higher than the national average and the average of schools in their socio-economic band in both years. With a view to equity, the school focused on raising the number of Pacific and Māori students achieving UE, a goal that they achieved for both groups.

Goodall Elementary focused on eliminating disruptions to learning and raising achievement for boys in writing. In the year before the project, they recorded 273 major 'behavioral incidents' which reduced to 196 in the first year of the project. In the second year, they also recorded minor incidences, thus numbers increased to 258. However, staff reported that behavior had improved markedly and noted a calmer environment where disruptions became unusual. Outcomes improved in all three core subjects – reading, mathematics, and writing. The focus on writing in the first year resulted in a major shift in outcomes that was

sustained in the second year. From an equity perspective, they raised outcomes of boys in writing and sustained these levels of achievement throughout the project.

Rubin High had a clear target for the minimum credits to be achieved in each subject (14+), however, this was an idealistic goal as it represented a 100% pass rate for NCEA. They saw a drop in Level 1 and 3 and UE over the course of the project. At all NCEA levels, Rubin High was below the average achievement of schools in their socio-economic band. In regard to equity in outcomes, they added a particular focus on increasing Māori students' achievement and noted a lift in NCEA Level 2 for them. However, the school served only a small number of Māori students.

These findings on progress mirror the schools' self-evaluations in goal-setting practices, presented in Table 1. All three schools judged themselves as proficient at BOP in all practices except collective responsibility. Curie High and Goodall Elementary judged themselves to have improved in almost all practices, while Rubin High judged themselves not to improved, even though their comments on the rubric acknowledged some incremental improvements.

Table 1. Self-evaluation rubric.

Aspect	Curie High		Goodall Elementary		Rubin High	
	BOP	EOP	BOP	EOP	BOP	EOP
Goal focus	Proficient	Advanced	Proficient	Proficient	Proficient	Proficient
Goal monitoring	Proficient	Advanced	Proficient	Advanced	Proficient	Proficient
Improvement strategies	Proficient	Advanced	Proficient	Advanced	Proficient	Proficient
Collective responsibility	Basic	Proficient	Basic	Advanced	Proficient	Proficient

Providing clear goals

The principals were aware of the need for few and clear goals. Both high schools used short mantras (i.e. 90/90/85 and 14+ credits) referring to the percentage levels of attainment they wanted to achieve in NCEA levels and the number of credits each student needed to achieve in each subject. Goodall Elementary focused on an equity goal in one subject area – improving boys' achievement in writing – and reducing incidences of behavioral issues. Previously, the school had multiple goals, as a senior leader pointed out:

> It didn't work when … we had different targets for different areas of the school for different year groups … some had been trying to get the girls "at" in maths to "above" [the standard] and others were trying to do this in writing and it all made sense, but it was very messy and nothing really happened. You learn that where it is a single thing and you are really focused and everything feeds in, makes the best shift. (Senior leader, Goodall Elementary, EOP)

Over the course of the project, Curie High and Goodall Elementary added several targets. For example, Curie High moved from four to 13 targets associated with NCEA levels and UE. As a result, staff were still aware of the overarching goal, but could not recall specific targets. However, it seemed the lack of knowledge of the targets was not an impediment to their goal focus, as their outcomes attest. Whereas, at Rubin High, staff could recount their one goal due to its simplicity and unchanging nature, but made little progress.

One difference in approach between schools related to the justification of goals. In Curie High and Goodall Elementary, the justification for the high goals seemed to challenge teachers' thinking about the school's performance. Staff in Goodall Elementary initially saw the school as performing well until confronted with data from similar schools which showed a considerable gap between their and others' performance. The comparison was "an eye

opener" (Teacher, Goodall Elementary, BOP). Curie High's principal took a similar approach, drawing on data from her previous school with a similar student population. The justifications seemed to lead to greater staff commitment than in Rubin High.

In Rubin High, the justification for the new 14+ credits goal stemmed from the principal's rejection of a deficit view of students. He believed that, under the previous percentage goal of 70/70/60, teachers could argue that they only needed 70% of students to pass to achieve the goal and hence it was acceptable for 30% to fail. He wanted to build the sense among teachers that every student mattered.

> Why would you start the beginning of the year with thinking "okay 30% of you are going to fail"? Why wouldn't you start with "everyone in my class is going to pass these 14 credits". That is why we changed to 14 credits, every student, every subject. (Senior Leader, Rubin High, BOP)

The goal seemed meaningful to students, but by EOP the principal acknowledged that many teachers were dismissing it because it was a 100% goal.

> My concern is where people aren't meeting it, [they say] "Oh that is okay. It's not a real target." Because it is essentially a 100% target … It is not a realistic target and so therefore becomes a little bit meaningless. (Principal, Rubin High, EOP)

It seemed evidence-based justifications were important to challenge teachers' beliefs around current and possible levels of achievement. In alignment to goal theory, in these cases, challenging goals seemed to raise commitment from staff. However, if the goal seemed unrealistic and the justification too 'idealistic', staff lacked commitment.

Close goal monitoring

Goal monitoring was a focus for all three principals. Two key strategies were noted to establish rigor and quality: embedding data monitoring in structures and routines; and making priority students visible.

Embedding data monitoring in structures and routines. In Curie High and Goodall Elementary, monitoring occurred in weekly or bi-weekly meetings at various levels. The extent, regularity, and rigor of those meetings seemed key to driving improvement. They were the main vehicle for holding different members of the school accountable and for having conversations about what to do in response to the data.

> At every faculty board [meeting of senior leadership] … it is all around data, data, data. Constant data coming out, deans wanting to know what is going on. We are being regularly reminded "what are we doing within our faculty?", "how do we know what is happening?", "how do we know how particular students [are performing] we have identified with concerns?" (HOD, Curie High, EOP)

In Goodall Elementary, teams met every week. One teacher had to present data from their classroom and bring students' work to show what was problematic so that others could support the problem-solving. Results were recorded in a shared document. Expectations around meetings and the follow-up were clear.

> There is an expectation from me as the curriculum leader that this happens every week in team meetings. (Senior leader, Goodall Elementary, EOP)

Meetings were scheduled in a similar way in Rubin High, but the principal reported difficulties in getting middle leaders to take responsibility.

> The group that have been hardest to shift have been our deans. We have deans' tracking meetings fortnightly and it has been a bit of a struggle to really get them into

15

the process and actually thinking of their job as [monitoring] student achievement. (Principal, Rubin High, MOP)

Senior leaders also noted patterns of middle leaders not taking responsibility and not bringing data or computers to meetings. These patterns were still being reported by EOP:

We monitor by each of the SLT having four or five HODs and deans at year levels to have those robust discussions. We need to start the conversation with the data, having a look at the data, but personally, what worries me [is] why do I still have to go, "Why didn't you bring your computer? Why, after a whole year, am I still saying the same thing?" (Senior Leader, Rubin High, EOP)

Quotes such as the above suggest both a lack of ownership and action of some middle leaders which resulted in a lack of rigor and regularity in monitoring during the year; a state that was keenly felt by the principal:

We did a lot of mopping up at the end of last year and it is never too comfortable, because you feel you really should be doing this through the year, and it was our aim this year to have a sense of urgency spread through the year and not finishing up all in term four. (Principal, Rubin High, MOP)

Where most successful, senior leaders constantly pushed teachers and middle leaders to respond to data about students who were not achieving and be creative in their problem-solving and practice. Meetings were forums for thinking about what prevented students from making progress. Principals took an active role in encouraging middle leaders to explore alternative ways to support at-risk students. This was less successful in Rubin High, where there was more emphasis on trying to empower teachers and middle leaders and, possibly,

less 'push' to problem-solve and follow-up. This seemed driven by the principal's belief that change takes time as a shift in culture needs to occur first:

> The transformational change has had to come in changing the culture of the staffroom, but once we achieved that it is more of a continuing improvement. But you can't get that continual improvement until everybody is on board […] the trust had to change in the school to start with, people weren't going to take on decision-making themselves if they didn't think it was safe to do so. (Principal, Rubin High, EOP)

Making priority students visible. Another feature of schools' monitoring was the focus on 'priority' students. These students were identified as those who could succeed but were at risk of not succeeding for various reasons. Teachers were in charge of reporting on these students' progress to their middle leaders, who then maintained focus on these students in discussions with senior leaders. In Curie High, after one year of new leadership, there was already "a much greater awareness of the concept of a priority learner as a learner who requires individualized, targeted [and] sometimes quite close levels of scrutiny" (Teacher, Curie High, BOP). The students themselves knew they were 'priority' students and could identify extra support that was afforded to them.

The process at Goodall Elementary was double-pronged. Each teacher identified 'priority' students in their class. Strategies were then discussed with their colleagues and team leader in regular meetings. Thus, these students were the focus of teachers' inquiries into their own effectiveness and the subject of very close monitoring in team meetings.

> Each teacher knows where their children are at, where they moved to, and what we have done as an inquiry for ourselves to push our priority students … Then, in our team meetings, we discuss our priority students and inquiry and what we are doing to move them. At staff meetings, we discuss it as well and [the principal] reports back …

where we are at, where we want to be, and if we are on track to get there. (Teacher, Goodall Elementary, EOP)

This specific focus on named students, not numbers or statistics, seemed to help build teachers' and middle leaders' collective responsibility as they saw the impact of the monitoring and problem-solving for individual, or groups of, students. Rubin High also reported having priority students, but the only visible progress was made with the small number of Māori students who were being mentored by senior leaders.

Increasing capabilities through professional learning

The schools' approaches to professional learning (PL) in support of the goals varied between compulsory and voluntary, and centrally organized to teacher-driven. One consistent theme was the focus on raising middle leaders' leadership capability. All schools enrolled their middle leaders in external leadership courses. Senior leaders also aimed to raise middle leaders' capability through the conversations they had in staff, team and one-on-one meetings, and through delegation and sharing of responsibilities.

PL is so hit and miss, the real learning happens when you are genuinely discussing data, students, and next steps. They are not the organized professional learning groups. (Principal, Curie High, EOP)

In terms of teacher PL, all schools moved from using mainly external PL delivered at school staff meetings to the use of Professional Learning Groups (PLGs). Curie High's initial reliance on whole school PL from external providers was perceived as disparate and unfocused. Staff felt their own expertise went unrecognized and 'talked at' as opposed to 'engaged'. At BOP, the school moved to PLGs. These were compulsory but staff opted into groups depending on their interests or needs. PLGs were run by teachers who had upskilled themselves on research behind key pedagogical practices identified as problematic. PLGs

involved teachers recording themselves for their own reflection and visiting other classes to gather ideas. These PLGs appeared to impact positively on teachers' attitudes and skills:

> We had five teachers leading these groups …every other Tuesday [there was] constant talking, discussing, being open, not making teachers feel they are going to be pulled up if they say they are not doing this. (Teacher, Curie High, EOP)

> Staff I have talked to have been really positive about PLGs because they got to talk across curricula. I was talking to a staff member whose results have gone from ... 60% failure rate to this year 100% pass rate, she attributes it to the strategies and ideas that she was given by other teachers… (Teacher, Curie High, EOP)

Goodall Elementary also initially relied on expert input at school level to raise capability, but with a strong focus on teaching writing and to improve behavior. This focus on two key areas was a departure from the previous principal's approach: "Prior to [the new principal] we had every new initiative that was floating around … it was 'let's try that' (Teacher, Goodall Elementary, BOP). By MOP, the school used internal expertise to implement strategies across subjects, utilizing team meetings as PLGs. They focused on monitoring and improving results for priority students while curriculum teams (comprising representatives from junior, middle, and senior levels), focused on literacy and numeracy.

> Teachers definitely do more collaborative work in their team meetings … and in lead teachers' meetings we do a lot of collaborative planning … (Teacher, Goodall Elementary, EOP)

Rubin High outlined a clear PL strategy by creating a 'plan on a page' that outlined their goal and three key strategies. The school used voluntarily PLGs led by teachers, who upskilled themselves and then led compulsory PL in school staff meetings. The PLG teacher leaders were seen as adding considerable value to the PD in the school, because they were

from a range of backgrounds and subject areas and used a wide range of pedagogies to deliver it, including students running parts of them.

> We got some really good buy-in from different staff and they led some really quality PL over the year for teachers in general just how to be more culturally responsive in your classroom particularly for our Māori kids. (Principal, Rubin High, EOP)

Thus, PL at all three schools came to focus more directly on classroom practice and was increasingly teacher-led. A difference was that Rubin High had a voluntary approach to PLGs whereas in Curie High and Goodall Elementary these were compulsory. Rubin High's principal and Head of Department articulated the reason for this:

> We learned from last year … we had some people who weren't as motivated to be in those groups, they weren't as effective as they could be. (Principal, Rubin High, EOP)

> How do you engage everybody? I think it is about making sure that people have choice and … maybe you get buy-in if they have choice. (HoD, Rubin High, EOP)

In the other schools, lack of buy-in from staff was accepted, but a lack of attendance was not.

Creating collective responsibility

All principals considered creating collective responsibility for outcomes as key to school improvement. Principals changed roles and structures to drive responsibility and accountability 'down' to middle leaders. However, these changes seemed only effective if those in charge displayed a willingness to respectfully challenge others to take responsibility for getting results and actively participate in problem-solving.

Changing roles and structures. All schools changed middle and senior leaders' roles to increase the focus on monitoring progress. For example, the high schools changed the deans' role from a mainly pastoral role to one of monitoring year-level achievement and attendance.

20

Middle and senior leaders were charged with monitoring achievement on the departmental level and reporting to senior leaders. Senior leaders were in charge of monitoring progress of a specific group of students or progress towards a specific target. Goodall Elementary changed the largely administrative team leader role to leading joint problem-solving about the progress of 'priority students' and reporting to senior leaders.

To enable staff to engage in data analysis and monitoring, all principals introduced new data-management systems. Taking time to support people to engage with the new system and show its advantages eventually improved staff's ability to track progress, but initially many saw the new expectations to be outside their job description.

> I am not a statistician yet I am asked to collate, analyze, and interpret data. Can we get people with time and expertise to do this so we can teach? (Middle Leader, Curie High, BOP)

While the introduction of the new system and stronger focus on data monitoring had short-term negative effects in teacher attitudes, long-term, it seemed critical to enabling 'just-in-time' monitoring. Monitoring systems were further strengthened by a strong chain of formal and regular reporting between different levels and parts of the schools which was particularly evident in the larger and more complex high schools. The degree of success, however, appeared to be directly related to the quality and rigor of the monitoring.

Willingness to challenge others' views. The newly established roles, structures, and routines only seemed effective in building collective responsibility where there was a willingness to challenge others to take responsibility. Getting leaders to take responsibility for data and the associated problem-solving was an ongoing source of challenge for principals:

One I remember really clearly is the dean when we were talking about a student's attendance. I said, "Well, okay, that is the problem. What is the solution to this?" And she talked more about the problem. I said, "Okay, that's the problem. What is the solution?" I had to say it three times and then she said, "Well, that's not my job." Challenging those moments when actually it is all of our jobs to find solutions to the problems. (Principal, Rubin High, EOP)

These direct challenges pushed people to take responsibility and had both positive and negative impacts. On the positive side, some staff took on responsibility:

We have become so much more aware of being responsible, accountable for students' physical, emotional, educational wellbeing. … I think a lot of staff have become more aware and have stopped blaming it on 10,000 things when they aren't meeting targets. (Teacher, Curie High, EOP)

On the negative side, staff noted feeling the pressure when they were expected to present their data in meetings. Staff knew the reasons for those results would be closely examined.

Now if they [HODs] don't [hit the target] nothing happens, but they lose sleep over it because they have to present every fortnight and be interrogated by primarily the principal but nominally senior leaders about what is going on with each student in danger of not hitting the target. (Senior Leader, Curie High, EOP)

In schools where these meetings became routinely embedded, staff seemed to move from an attitude of compliance to one of acknowledging that data analysis and monitoring were integral to improving results. Meetings became problem-solving forums:

I guess the culture has changed; it is no longer seen as compliance. Most teachers will see it as helpful; it helps the person who is sharing, but it also helps others because they all think "oh maybe I could try that." (Teacher, Goodall Elementary, EOP)

Thus, while there was initial resistance, especially where explanations of poor results were linked to students, families, or conditions, once strong procedures were embedded and results became evident, a rise in teachers' collective responsibility appeared to develop.

Discussion

First, our findings highlight the importance of setting clear goals for improvement, but more importantly, of justifying the goals in ways that engage and potentially challenge teachers' beliefs around current achievement levels to ensure commitment. Gaining commitment depends on whether leaders can engage with teachers' underlying beliefs around whether there is an existing problem and whether they have the ability to solve it (Authors, 2016a; Robinson, 2018). As Greenberg and Baron (2000) noted, unless teachers understand and recognize the need for change, their commitment to change will be minimal and their interest in maintaining the status quo will take precedence. By providing evidence of similar schools achieving at higher levels, principals in this study challenged teachers' acceptance of the status quo, created a sense of urgency, and gained commitment to the goal (Conzemius and Morganti-Fisher, 2012; Locke and Latham, 2019; Timar and Chyu, 2010; Zimmerman, 2006). Consistent with goal theory, when teachers believed a goal was unattainable, they were less inclined to pursue it. As Locke and Latham (2019) noted, "impossible to attain goals can lead to demoralization… goals should be challenging yet attainable" (p. 98).

Second, our findings emphasize the value of ensuring strong routines in well-managed meetings that focus on data and the implications of that data. Success was closely related to rigor in monitoring and adjusting to findings in a timely way. The use of artifacts, such as reporting schedules and agenda templates, enhanced meeting effectiveness. Strategies need to be not only espoused but embedded into school activities, routines and norms with clear expectations that they are enacted (Bryk et al., 2010; Lewis, 2015; Timperley, 2005). Reporting and problem-solving in meetings created public accountability which is linked

23

with growing a sense of collective responsibility (Knapp and Feldman, 2012). As noted by Bryk et al. (2015: 60) "…developing well-honed routines is a key to achieving quality more reliably in the execution of complex tasks. At the same time, addressing organizational complexity requires solving problems of coordination, communication, and system sensing" (i.e. having good data about what is actually going on).

Third, it seemed a more compulsory approach to professional learning was more effective, especially at the onset of the change process. All schools increasingly evolved to a more teacher-led approach over time. In two of the schools, staff attendance was compulsory. However, Rubin High created less of a feeling of compulsion which was exemplified with the approach to PLGs. Some staff had not engaged previously and so the expectation of all being involved in PLGs to learn was abandoned. It should be noted that not all staff were enthusiastic 'believers' in Curie High either, but they were still compelled to be involved.

Finally, the principals implemented similar strategies to create collective responsibility. A key difference in the implementation of these strategies seemed to lie in principals' beliefs driving the implementation. Two of the principals were driven by a belief that improvement was needed urgently and hence changes in roles, procedures, and practices were put in place rapidly and monitored tightly. Furthermore, expectations of behaviors were clearly communicated and followed up. Thus, formal and informal controls were put in place, mostly without the involvement or consultation of wider staff (Forsyth et al., 2011; Zimmerman, 2006). Principals built collective responsibility through the pursuit of improvement, for example the increased collaboration encouraged through new structures, and short-term wins in the form of achievement gains (Meyers and Hitt, 2018; Zimmerman, 2006).

For the principals' approach to be successful, they depended on middle and senior leaders to be willing to engage with data, but more importantly to challenge others' views and lead problem-solving on teaching and learning. Ownership by middle leaders is critical if

24

they are to work successfully with teachers. If they do not believe the task is possible, teachers are not likely to. That belief drives the extra energy and persistence required to get results (Tschannen-Moran et al., 2014). It seemed these schools' approaches created some of the conditions enabling effective middle leadership noted in Leithwood's (2016) review of the literature, such as a strong, school-wide focus on teaching and learning, an agreement on the importance of student learning, clear role descriptions, and delegation of considerable responsibility to departments. Furthermore, the schools invested in leadership training for middle leaders to acquire needed leadership knowledge and skills.

In contrast, the third principal believed that a culture of trust was needed first for improvement to happen. His approach was to foster collegial trust and to empower teachers to make decisions aiming to build their internal accountability. The school worked hard on creating a positive staff culture, and had data to show they achieved that, but it did not translate into better results. While the school implemented the same strategies as the other schools, formal and informal controls seemed less rigorous. As a result, meetings did not always occur and a focus on data monitoring and problem-solving appeared less effective. New strategies in response to data often took a long time to implement as staff seemed reluctant to take responsibility and senior leaders seemed reluctant to impose changes.

Conclusion

In conclusion, the findings of this paper point to a conundrum for school leaders on how to lead goal-driven school improvement efforts. All three principals had a strong notion of the structural changes that were required to get improvement. Their degree of success on achieving both the people and the structural sides of the improvement depended on what they believed to be their most promising driver: working firstly on developing trust and internal accountability among staff or on tightly managing the efficacy of the procedures by putting in place formal controls to create collective responsibility. While our findings show that the

25

latter produced greater improvement, the research literature seems ambivalent about whether formal controls diminish or build trust (Forsyth et al., 2011). We note that both formal and informal controls are required simultaneously. We concur with Robinson et al. (2008: 659) who noted, "Effective leaders do not get the relationships right and then tackle the educational challenges; they incorporate both sets of constraints into their problem solving". There is a high personal cost in driving improvement. Each of these principals was severely tested by their efforts in their new schools, and sometimes felt a level of despair at the difficulty of getting staff 'buy-in'. They all made unsolicited acknowledgements of the importance of the support provided by the research team and the opportunity for reflection that the workshops provided. They also acknowledged that the (separate) training for their middle leaders helped to create a shared language and understanding of the school improvement process. Nonetheless, their fortitude was severely tested at times. At the time of writing, all three schools have had some staff turnover, much of it helpful in cementing the new culture that is more data and improvement-focused. These accompanying factors should be kept in mind when reading our accounts of the improvement process in these schools as they contributed or influenced this process.

While the argument is sometimes made that 'what gets measured gets done' (see Hallinger and Heck, 2002) is creating too narrow a focus, it is worth noting that the improvement work undertaken in these schools impacted on other areas. For example, there was strong evidence in the elementary school of gains in every curriculum area as the learning from going 'narrow and deep' in one area has been applied to other curriculum areas. Timperley and Parr (2009) discuss similar research findings which show that improvement strategies learned in one curriculum area can transfer to other areas resulting in wider improvement "creating a more comprehensive, but still focused, improvement agenda over time" (Timperley et al., 2020: 23)

We conclude that leading improvement through goal-setting has the potential to improve equity in outcomes for our most vulnerable students, but its effectiveness depends on leaders' willingness to focus on tight monitoring of processes and the resulting short term outcomes, and commitment to creating a culture of collaborative problem-solving with staff.

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