Researching the Impact of Leadership Practices on Student Outcomes: Progress Made

and Challenges to Overcome.

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This paper is in two parts. In the first I briefly review what we know about the relationship between school leadership and student outcomes. In the second section of the paper, I discuss three of the many challenges that face researchers who are seeking more powerful ways of investigating how school leadership creates the conditions for improved student learning and achievement.

Leadership Practices and Student Outcomes: Progress Made

The last 20 years has seen a remarkable turnaround in leadership research. From deep scepticism, at least among quantitative researchers, about leaders' impact on student outcomes (Purkey & Smith, 1983), we now have evidence that they can make a considerable difference to the learning and achievement of students (Hattie, 2009; Marzano, Waters & McNulty, 2005; Robinson, Lloyd & Rowe, 2008). Whether or not they do make a difference, however, depends on the particular leadership practices they employ, because different types of leadership have, on average, very different impacts on student outcomes.

One way of characterizing types of leadership is by their theoretical origins. The two leadership theories that have had the most influence in education are transformational and instructional leadership. Transformational leadership refers to that type of leadership which elicits unusually high levels of commitment, loyalty and energy from followers, particularly under conditions of radical or transformational change. The influence processes associated with strong transformational leaders include high levels of individual consideration, intellectual stimulation,

encouragement of creativity, and inspirational motivation. The latter usually involves the development and communication of an attractive vision (Bass & Avolio, 1994; Burns, 1978).

Instructional leadership, unlike transformational leadership which has its origins in business, has its origins in empirical studies of schools in high poverty areas that succeeded above the odds (Alig-Mielcarek & Hoy, 2005; Edmonds, 1979; Hallinger, 2005). In such schools, leaders were more closely involved with the core business of teaching and learning, held high expectations of both staff and students, ensured high quality opportunities to learn, and engaged parents and community in the educational work of the school.

While there have been separate reviews of the relationship between each of these types of leadership and student outcomes, (Hallinger & Heck, 1998; Leithwood & Jantzi, 2005), they had not been systematically compared until the recent meta-analysis by Robinson, Lloyd and Rowe (2008). Their analysis of 22 studies showed that the impact of those types of leadership that are characterized as instructional are three to four times greater than those characterized as transformational. The reason is that measures of instructional leadership are more likely to capture variation in the particular knowledge and skills required to drive improvement in teaching and learning. For example, while transformational and instructional leadership theories and their associated measures both focus on shared goals, instructional leadership research is more likely than transformational to assess, not just the presence of shared goals, but the extent to which they are focussed on improved academic or social outcomes for students. It is this educational specificity that may account for the stronger relationship between instructional leadership and student outcomes.

In order to dig more deeply into the particular practices responsible for these leadership effects, Robinson, Lloyd and Rowe (2008) conducted a more detailed analysis of a subset of 12 of the 22 studies that had been included in their comparison of instructional and transformational leadership. The remaining 10 studies were not included in this second meta-analysis as their leadership measures could not be disaggregated into constituent components. The 199 leadership indicators were grouped into five categories, or leadership dimensions, and an average effect size[1] calculated for each. The analysis showed that some leadership dimensions made a considerable impact on student outcomes. The dimension described as "promoting and participating in teacher learning and development" had the largest average effect on student outcomes. The 0.84 effect size for this dimension can be broadly interpreted as meaning that for every one unit increase in this type of leadership, there is a .84 increase in the relevant student outcome. Moderate effects were also found for two other leadership dimensions - establishing goals and expectations (0.42) and planning, coordinating and evaluating teaching and the curriculum (0.42). Small, but still educationally significant effects were found for the two broad sets of practices described as strategic resourcing (0.31) and establishing a safe and orderly environment for both staff and students (0.27).

The main findings of the Robinson et al. (2008) meta-analyses confirm and extend several previous reviews of the published evidence on the links between leadership and student outcomes. In a review of 40 empirical studies published between 1980 and 1995, Hallinger and Heck (1998) concluded that principals have a small indirect effect on student achievement and that the dimensions of leadership that

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[1] An effect size is a standardized measure of the strength of the relationship between two variables. The larger the effect size the stronger the relationship between the two variables. Following Hattie (2009) we use the following lower boundaries as a guide when interpreting effect sizes: .2, small; .4, medium; .6, large.

were most powerful were: establishing shared academic goals; building social networks and structures that enable goal achievement; being directly involved in instructional supervision and support; building teacher capacity and providing high-quality opportunities for teacher learning; caring for staff as individuals and being skilled in problem solving and conflict resolution.

Given that the Hallinger and Heck review was confined to studies of principalship, while the Robinson et al. meta-analyses incorporated studies of both principalship and of other school leaders (e.g., deputies), the overlap in their findings suggests that the five leadership dimensions identified by Robinson et al. are important regardless of who carries them out. There is, however, one set of practices identified by Hallinger and Heck (1998) that is different from those identified by Robinson and that may suggest an aspect of instructional leadership that is particularly germane to principal leadership. Principals make an impact on student outcomes not only by setting academic goals but by also building social networks and structures that enable goal achievement. Such school-wide leadership contributions are more likely to be led by the individual with responsibility for the whole organization than by other position holders. This emphasis on leadership as structuring the organization is also found in the work of Leithwood, who described it as a process of establishing policies and procedures such as timetabling, staff assignments and the deployment of resources in ways that support the achievement of educational goals (Leithwood & Riehl, 2005).

In summary, the literature on the links between leadership and student outcomes suggests that "the more leaders focus their relationships, their work, and their learning on the core business of teaching and learning, the greater their influence on student outcomes" (Robinson et al., 2008, p.636). It is perhaps this focus, sustained

over a range of different leadership practices that best characterizes what has come to be known as instructional leadership.

Leadership Practices and Student Outcomes: Challenges to Overcome

In the remainder of this paper I discuss three challenges to progress on learning more about how leaders create the conditions for improved teaching and learning. I focus particularly on broad conceptual and methodological challenges that are relevant to reserch that is predominantly quantitative or qualitative in its approach. The first challenge is the need to integrate leadership research more closely with research on effective teaching and learning; the second is the current mismatch between our theorising about leadership *practice* and our measures of leadership *behaviours* and the third is the issue of how to identify practices which are appropriately categorised as *leadership* practices. While my discussion of these three challenges will point to some ways forward, my purpose is not to make definitive recommendations about how to overcome them. The difficulties they pose, particularly the last two, preclude such an ambitious goal. Rather, my goal is to invite debate about their importance and about how they might be overcome with different research strategies.

First Challenge: Greater Integration of Leadership Research with Evidence about Effective Teaching, Teacher Learning and School Organisation

The emerging evidence about leadership impacts has brought a much greater focus in both leadership research and development on the educational aspects of school leadership. This is seen in the current focus on what is broadly known as either instructional leadership (Hallinger, 2005), learning-centered leadership (Goldring, Porter, Murphy, Elliott, & Cravens, 2009), or the leadership of the improvement of teaching and learning (Elmore, 2004). The question I am raising here is whether the educational focus is sufficiently well informed by evidence about effective teaching

and effective teacher learning to discriminate those leadership practices that are more or less likely to make a difference. While measures of leadership are now assessing the degree of focus on broad instructional leadership activities, they are not yet assessing the extent to which that instructional leadership is ensuring the types of teaching, teacher learning and school organisation that are more likely to make a difference to students. A couple of examples will serve to illustrate what I mean by ensuring that knowledge about leadership research is informed by evidence about "what works" in school organisation, teacher learning and teaching.

The survey items which have been used in quantitative studies of the relationship between school leadership and student outcomes typically do not discriminate between those varieties of the practice that are more or less likely to be effective in achieving specific student outcomes. Take, for example, the survey items used to assess leaders' involvement in the evaluation of teaching. While some of the items do have a normative focus on the *quality* of leaders' evaluation of teaching, the selected qualities are not those that are most likely to make a difference to student outcomes. Bamburg and Andrews (1991), for example, asked teachers about the *clarity* of the criteria leaders use to evaluate their classroom performance, and the *frequency* and *usefulness* of leaders' feedback. Similarly, Heck and colleagues assessed the *regularity* of classroom visits and the degree to which monitoring of student progress is *systematic* (Heck, Larsen and Marcoulides, 1990; Heck, Marcoulides & Lang, 1991).

These survey items admit many different types of evaluative criteria and many different types of feedback. Take the indicator that asks about the frequency of classroom visits. Is it the *frequency* of visits that makes the difference or is it more likely to be the type of feedback that is given after the visits? If the latter, then a

survey item that seeks the frequency of visits will not discriminate between classroom visits accompanied by high quality feedback and those that are not, and so this measure will show much weaker impact on student outcomes than a measure which discriminated between the two types of classroom visits.

Similarly, if the student outcome variable is mathematical reasoning and problem solving, then it is unlikely that these leadership indicators will discriminate the types of feedback that are more and less aligned to this pedagogical purpose. More frequent feedback about, for example, the use of brief reviews and the clarity of instructions, regardless of their responsiveness to student understanding or misunderstanding, is unlikely to show a strong relationship with students' mathematical reasoning (Nelson & Sassi, 2005). On the other hand, an indicator that assesses the frequency of leaders' feedback to teachers about their knowledge of and responsiveness to their students' understandings is much more likely to show strong relationships with these student outcomes.

In summary, if measures of instructional leadership behaviours were more strongly aligned with research on effective teaching, they might show even stronger relationships with student outcomes. Given that leaders put in place the social and organisational conditions that make effective teaching possible, leadership research that was strongly aligned to research on effective teaching could provide much more specific guidance about the nature of those conditions.

Second Challenge: Better Alignment of Measures with the Concept of Practice

While many educational leadership researchers have embraced the shift from studying leaders to studying leadership *practices,* many of the measures they employ are better suited to the study of leadership *behaviours*. What are the methodological requirements of each? Are our leadership surveys measuring leadership behaviours

rather than leadership practices? If so, does it matter? What would measures of leadership practice look like?

Spillane is perhaps the best known advocate of a practice-based analysis of leadership (Spillane, Halverson & Diamond, 2004). In proposing his theory of distributed leadership practice he notes that relatively few scholars have taken up the challenge of theory building around the practice aspect of leadership. For Spillane, "the appropriate unit of analysis is not leaders or what they do, but leadership activity" – (Spillane et al., p. 10). Leadership activity – a term that he uses interchangeably with practice – " is constituted - defined, or constructed - in the interaction of leaders, followers and their situation in the execution of particular leadership tasks" (Spillane et al., p. 10). For any given leadership task, the practice that evolves is shaped by the reciprocal and shifting influence of leaders and followers and by aspects of the situation, including the artefacts they draw on in completing the task.   Thus, practices can not be reduced to a set of behaviours that can be extracted from place and time and inserted into different contexts. The context is constitutive of the practice.

Given the centrality of context to practice, the challenge for distributed leadership researchers "is to identify those aspects of the situation that are critical in constituting leadership practice" (Spillane et al., 2004, p. 21). While Spillane has provided a broad framework for conceptualising practice, it is too general to guide the search for the relevant constitutive elements for any *particular* leadership practice.

In the previous section I argued that identifying effective leadership impacts on student outcomes required quite precise differentiation between broadly similar leadership behaviours. Distinctions were needed, for example, between classroom visits that monitored and supported responsive teacher-student interactions and visits

that monitored compliance with a checklist of teacher behaviours, because the former were more likely than the latter to promote high level learning outcomes. The study of leadership practices as opposed to leadership behaviours would involve going beyond the observable to identifying those features of leaders, followers and the situation that explain why one form of teacher evaluation rather than the other is in place. It is those features that constitute the context and that are constitutive of the practice. Thus, I am suggesting that it is the identification of relevant contextual features that distinguishes the study of leadership practice and leadership behaviours.

How are the contextual features that shape and sustain particular practices to be investigated? In the following section I propose a concept of practice that I have found useful for this purpose. More details about the concept and examples of how it has been employed in studies of practice are found in Robinson (1993; 1996).

What is a practice? Practices are routines that have evolved in relevant communities as ways of solving frequently occurring practical problems (Hutchins, 1995). They are carried out by people in interaction with each other and relevant tools. Practices are explained by understanding why the current routines are used to solve the particular practical problem rather than some plausible alternative. In other words, why has the problem been formulated, and thus solved in this way?

I have attempted to answer this question by using the conceptualisation of problem and problem solving provided by the philosophers of science Thomas Nickles and Herb Simon (Robinson, 1993; 1998). Nickles (1981, 1988) describes a problem as a set of constraints and a demand that it be solved. The more constraints on a problem the easier it is to solve, because constraints rule out solutions that would otherwise be possible. This probably seems counter intuitive to those who understand a constraint as something which stops you doing something you would otherwise

want to do and contrast it with an "affordance" which presumably admits your preferences. The impossibility of solving unconstrained problems become clear, however, through examples like the following: A teacher who is asked to write a curriculum unit can not solve this problem without setting some constraints on the solution that specify such things as the age of the children, subject area, regulatory requirements, key values and learning outcomes etc, etc. Constraints enable by reducing the problem space and thereby pointing the way to a solution. They restrict in the sense that they rule out otherwise acceptable alternatives.

There are an endless number and type of constraints. From the point of view of explaining a particular practice the relevant constraints are those that rule out the obvious alternatives. The relevant constraints have their origins both inside and outside the heads of actors. The former include the beliefs, values and capabilities of the relevant actors and their perceptions of the reactions of relevant followers. The latter include material resources, policy and regulatory requirements and other practices, such as timetable and teacher release, with which the classroom observation routines must be coordinated.

With reference to the contrasting teacher evaluation example I discussed earlier, discovering the constraints that ruled in the checklist approach would involve, expressed in simplistic terms, asking relevant practitioners why they used the observed routine *and* why they did not use a particular alternative. Since practitioners do not always have accurate knowledge of the constraints in their practice, their answers need to be rigorously checked against relevant observational data, others' accounts and relevant documents. The result of such inquiry is not a list of relevant constraints but an account of a *constraint structure* which expresses how the relevant constraints have been integrated to produce the observed leadership routine.

In summary, since practices are solutions to problems about what to do, practices are explained by discovering the constraints on the problem, their relative weighting and how they were integrated despite their inevitable tensions. The constraints have their origins in qualities of the relevant leaders (e.g. relevant knowledge and experience), interactions between leaders and followers (e.g. the match between leader and follower preferences) and aspects of the situation (e.g. available tools and resources). It is the process of integrating these various constraints that leads Spillane to describe leadership as *stretched over* leaders, followers and the situation" (Spillane & Orlina, 2005).

Implications of for empirical research. Given this account of a practice, I now return to the question of its implications for the investigation and development of leadership practices that make an impact on student outcomes. First, it seems clear that quantititative studies of the relationship between leadership and student outcomes deal in leadership behaviours and not leadership practices. In itself that is not a problem – I am not sure it is possible to study practice in its rich sense at scale. The quantititative studies of relationships between leadership and outcomes are invaluable for locating the effects of different types of leadership behaviours on outcomes. Once located, in this way, additional qualitative studies can then be conducted which inquire into the constraint structure that explains the leadership behaviour.

Second, by identifying the constraints that explain particular leadership behaviours we learn a lot about the levers for change. For example, if the pedagogical knowledge of leaders responsible for teacher evaluation is limited to a behavioural pedagogy, they are unlikely to be able to critique and oversee the development of a framework that supports teaching that is responsive to students' understandings and misunderstanding (Nelson & Sassi, 2005). If the key constraint is leaders' content

knowledge then that constitutes a lever for change. Behavioural measures of leadership provide limited insight into the cause of the observed or reported behaviours. On the other hand, inquiry into constraint sets provides rich information about how to increase the impact of leadership on student outcomes.

Third Challenge: Better Alignment of Measures with the Concept of Leadership

The third challenge I address is the extent to which our various measures of leadership actually tell us about leadership. There is no easy answer here as there are a variety of conceptions of leadership evident in recent empirical research on leadership and its impacts. In this section I discuss three different conceptions and their implications for learning about the influence processes that are at the heart of leadership and for making connections between leadership and student outcomes.

How has research on leadership impacts identified acts of leadership? There are at least three different three strategies. By far the most common approach is to specify particular tasks or behaviours which are deemed to be leadership responsibilities and then to ask teachers to report the extent to which leaders do them or ensure that they are done. This approach to the measurement of leadership was used in most of the 22 studies that contributed to the meta-analysis of leadership impacts that was discussed in the introductory section of this article. The merit of this approach is that it has led to a much more detailed understanding of the relative impact of different types of leadership. Its disadvantage is that the influence processes that are at the heart of leadership are rendered invisible. It is assumed that by simply engaging in the task or ensuring that others do so, others are enjoined to behave in ways that promote group or organisational purposes. The processes of influence remain a black box.

A second approach to the measurement of leadership is more directly concerned with influence processes. The recently released measure of learning-centered leadership produced by a group at Vanderbilt University (Vanderbilt University, 2008) asks teachers to report on the effectiveness of their principal's leadership by responding to items that integrate key tasks with core leadership processes. The intention is to assess leaders' ability to plan, implement, support, advocate, communicate and monitor in the context of performing key educational leadership tasks. The analyses provide separate scales for leadership effectiveness on each leadership process. The assumption is that the higher the scores on these scales the more effective the leadership in influencing staff.

Some of the many measures of leadership effectiveness developed by Spillane and his colleagues also target influence processes (Spillane, Camburn, & Pareja, 2007). Rather than assessing actual influence however, Spillane assesses the intention to influence – a strategy that reflects his conception of leadership. He defines leadership as "…activities tied to the core work of the organisation that are designed by organisational members to influence the motivation, knowledge, affect or practices of other organizational members, or that are understood by other organizational members as intended to influence their motivation, knowledge, affect or practices" (Spillane, 2006, p. 12-13). For Spillane it is the intention, or the perception of the intention to influence, rather than actual influence that is the defining characteristic of leadership.

All three of the types of measure discussed so far can be criticised for providing, at best, indirect measures of leadership influence. If leadership is the exercise of influence in the context of organisationally important goals and tasks, then none of these measures provide a direct window into those processes because they are

focussed on leadership behaviours rather than followers' reactions. It is the exercise of influence that links leader and follower and that establishes the social nature of leadership acts. This means that the intended recipients of leadership influence, rather than the intended influencing agents should be the focus of more of our leadership indicators. How might this be achieved?

In reviewing some classical empirical literature on the social psychology of leadership, Gibb (1969) concludes that there "is good evidence that members of a group can identify reliably those persons who exert most influence upon them and that leaders defined this way are closely correlated with leaders identified by external observers and by other criteria" (p. 211). Rather than assume that people in particular roles exercise influence, or that the performance of particular tasks involves, by definition, the exercise of influence, the classic studies to which he refers invited group members themselves to report who had influenced them, and in some cases checked these nominations against those made by independent observers of the group's activities.

A similar approach has been taken in some more recent studies in which leadership has been assessed by asking teachers whom they turn to for advice or ideas (Friedkin & Slater, 1989; Leithwood, Mascall, Strauss, Sacks, Memon, & Yashkina, 2007; Spillane, Camburn, Pustejovsky, Pareja & Lewis, 2008). I should acknowledge at this point that seeking advice is not quite the same as taking it, and it is the latter that comes closer to my concept of leadership as consensually accepted task-related influence. It is not unreasonable to assume, however, that teachers learn from experience about whose advice is more likely to be helpful, and that those teachers from whom advice is sought are likely to be the more influential with respect to the relevant task.

The importance of using more such indicators of leadership is apparent from a comparison of the results that emerge from use of this approach with those derived from studies that equate leadership with formal position. In the study of Spillane et al. (2008), only 45% of those nominated by teachers as sources of advice in math and 44% of those nominated in reading had formal leadership roles. Even more significant was the finding that approximately two thirds of those with a specialist leadership role in reading were not nominated as a source of advice by at least three teachers in the schools in which they were located. In math, the equivalent figure was "over 50%" (Spillane et al., 2008, p. 208). These findings suggest the differences that are likely to emerge from measures based on different conceptions of leadership.

It is important to acknowledge the considerable practical difficulties in employing indicators of leadership based on the reactions of followers. No doubt those difficulties are responsible for the use of indicators which assess the intention rather than the actuality of influence. One difficulty not mentioned so far is the need to specify the time period within which influence is demonstrated (Katz & Kahn, 1966). As Gronn explains, the effect of the influence may be immediately apparent or may not be felt until a considerable period of time has elapsed. "The absence of evidence of immediate causal effects at any point in time, therefore, should not be interpreted as absence of influence or leadership" (Gronn, 2000, p. 331).

In summary, many measures of leadership based on the performance of so-called leadership tasks, and on measures of intended influence assume rather than directly test the exercise of influence. Measures of follower reactions provide a much more direct assessment of who has exercised task relevant influence, and the evidence so far suggests that the distribution of positional leadership is not readily mapped onto the distribution of actual influence.

Final Comment

I have identified three challenges to be overcome in further research on the impacts of leadership practice. They are the need to infuse evidence about effective teaching, teacher learning and school organisation into indicators of leadership tasks; the need to be clearer about the distinction between leadership practice and leadership behaviour and the need to more directly study the influence processes that are at the heart of leadership.

With respect to the first challenge, if the raison d'être of school leadership is the improvement of student achievement and well-being, we need to assess the extent to which leaders are creating the conditions that enable and require teachers to improve those outcomes. The knowledge base for identifying those conditions is not found in the literature on leadership, or in organizational theories. Rather, it is found in recent research on effective teaching and teacher learning. Hence there is a need for a far closer alignment of research on leadership with outcomes-linked evidence about teaching and learning.

With regard to the second challenge, there is a need for qualitative inquiry into the leadership behaviours that have been shown through quantitative inquiry to have a relatively strong impact on student outcomes. The purpose of the qualitative inquiry is to move from the study of behaviours to the study of practice by discovering the constraints that enable the effective practices and rule out the less effective ones. Such inquiry provides rich clues about how to intervene to improve the impact of leadership on student outcomes.

The third challenge can be addressed by more research that uses follower reaction to identify the exercise of leadership. Studies that ask teachers about the origins of changes they have made in their practice and about who or where they go to

for advice, would identify those people and artefacts that are influential with respect to particular tasks. Having located such sources of leadership, a range of possibilities is opened up about examining the knowledge, skills and dispositions that enable the influence. Other possibilities include identifying, explaining and intervening in the degree of alignment between those who have positions and responsibilities that are intended to be influential and those who actually exercise leadership influence. What are the consequences of different degrees of alignment for improving teaching and learning?

As stated at the outset, these three challenges are not the only ones we face in tracing and strengthening the relationship between leadership and a range of valued student outcomes. They are, however, ones that are common to the variety of methodologies that are employed in inquiry into the impact of leadership on student outcomes.

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