Paradoxes of leadership: contingencies and critical learning

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There is a paradox at the centre of a substantial amount of writing on the topic of leadership in organizations, particularly school leadership. On the one hand, there is what may be called a common-sense consensus that leadership is vitally important as a cause for setting and achieving organizational goals. Yet, on the other hand, an impressive body of empirical research concludes that the effect size of leadership on certain key organizational outcomes, such as promoting student learning, is small. We begin by discussing the first of these claims. We then discuss the second and finally discuss proposals for a resolution which is framed within the perspective of leadership theorized as a form of critical learning. In our resolution we argue that the contingencies of leadership contexts are sufficiently different to compromise the goal of producing a single leadership model. Instead, we urge that the role of school leaders in promoting learning, or other organizational goals, needs to be discerned from the leader's own theory that guides their decisions and actions, at least where that theory is developed from epistemically successful problem-solving practices. Such a stance implies that the paradox is generated by false assumptions and that both large-scale empirical studies and generalized leadership models are inappropriate tools for discerning the contribution of leaders to school outcomes.

Introduction

There is a deep puzzle, or paradox, at the core of leadership studies, both in education and beyond, which can easily be stated in the form of two apparently contradictory claims:

1. Leadership is vitally important as a cause for setting and achieving organizational goals.
2. An impressive body of empirical research concludes that the effect size of leadership on certain key organizational outcomes is small.

With a focus on educational leadership, we will spend a little time discussing the first of these claims, more time discussing the second, and the remainder discussing proposals for a resolution. Our own proposal for a resolution will be framed within the perspective of leadership theorized as a form of critical learning.

The importance of leadership: the common-sense consensus

In the field of education, there is a vast literature — monographs, handbooks, journal articles, entire specialist journals, and countless courses and training programmes — whose main theme could readily be summarized by the proposition that "leaders are important because they serve as anchors, provide guidance in times of change, and are responsible for the effectiveness of organizations" (Hoy & Miskel, 2001:391). Indeed, so ubiquitous is this view that it may be regarded as the common-sense consensus. The consensus may

not extend to theories about the nature of leadership, or the development of leaders, or the tasks of leaders or the sorts of skills that are required to be a good leader, but there is no denying it is widely held that leadership not only matters in organizational life, but that it is fundamental. Consider, for example, Yukl's (1999:7) influential view:

> Leadership is the process of influencing others to understand and agree about what needs to be done and how it can be done effectively, and the process of facilitating individual and collective efforts to accomplish shared objectives … the definition includes efforts not only to influence and facilitate the current work of the group or organization but also to ensure that it is prepared to meet future challenges.

House *et.al.* (1999:184) make an almost identical point with greater brevity when they claim that leadership is "the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization".

Senge (1990:340) offers the following viewpoint:

> In a learning organization, leaders are designers, stewards and teachers. They are responsible for *building* organizations where people continually expand their capabilities to understand complexity, clarify vision, and improve shared mental models, that is, they are responsible for learning. This new view is vital … In the absence of this stand, the learning disciplines remain mere collections of tools and technique-means of solving problems rather than creating something genuinely new.

Leithwood *et al.* (2004:62) claim that "successful educational leaders develop their schools as effective organizations that support and sustain the performance of teachers as well as students …". And finally (Harris & Mujis, 2005:4) declare that:

> In England and many other western countries, there has been a renewed interest in the power of leadership to generate and sustain school improvement. A premium has been placed upon the potential of school leadership to contribute to school improvement and to create the conditions in which the best teaching and learning can occur.

Some of these views are embedded in theories that offer systematic accounts of the importance of leaders and leadership. Thus, many contemporary studies support a framework where leadership is perceived to be a transformative influence process within school systems. Leithwood and his colleagues have undertaken several empirical studies to investigate the transformational nature of leadership, especially principal leadership (Leithwood, Jantzi & Steinberg, 1999). Transformational leadership theory tends to focus on a 'leader' and as such this presupposes a 'leader and follower' relationship though the relation is often one of shared vision building, not necessarily one of a hierarchal relationship.

Theories related to instructional leadership see leadership as "those actions that a principal takes, or delegates to others, to promote growth in student learning". (DeBevoise, 1984:14-21). In practice, this has been taken

to mean that the principal potentially can encourage educational achievement by making instructional quality the major priority of the school and bring that vision to realization. A principal who is an instructional leader is charged with redefining his/her role to become the primary learner in a community striving for excellence in education (Troen & Boles, 1994). As such, it becomes the principal's responsibility to work with teachers to define educational objectives and set school-wide or district wide goals, provide the necessary resources for learning, to create new learning opportunities for students and staff, pay attention to the change process and to human relationships, listen well, communicate respect, perpetuate ongoing dialogue about teaching and learning, and encourage teachers to act on shared visions (Conzemius, 1999). The transformative power of leadership that looks towards vision building or the building of a moral or ethical purpose has been discussed extensively in the literature (see for example, Fullan, 1993; 1999; Sergiovanni, 1996; 2001) with the implicit assumption that for teachers and schools to be effective, individual moral purpose, which is sometimes believed to be the focus of all leadership activities, must be linked to larger social good. Leaders are therefore expected to provide moral leadership.

There is also much emphasis on educational leadership that weaves closely leadership with change agency. Fullan (1993; 1999; 2001), for example, makes a detailed case for the importance of schools to comprehend the complexities of a changing environment and the need for school leaders to be perceived as change agents. Others echo this, maintaining that given the variety of challenges that educational systems face today, the ability to cope with change is deemed a necessity for school leaders (Cetron & Gayle, 1991; Mauriel, 1998; Millard, 1991). This sort of discourse on school leadership urges educators to understand, articulate and be committed to their role as being democratic change agents in developing the social and intellectual capacity of all learners.

The unimportance of leadership: dissenting voices
Despite an impressive consensus concerning the importance of leadership in the achievement of certain organizational goals, there are dissenting voices. Thirty years ago, Pfeffer (1977) claimed that so scarce was any evidence for the effect of leaders that it was more plausible to ignore their causal role and instead try to explain their role in other terms. He proposed adopting a phenomenological analysis:

> The more phenomenological analysis of leadership directs attention to the process by which social causality is attributed, and focuses on the distinction between causality as perceived by group members and causality as assessed by an outside observer. Leadership is associated with a set of myths … (Pfeffer, 1977:111).

His point was that people were being misled by the myths and that a more worthwhile focus of leadership studies should be the origin and effect of these myths.

Resnick (1994) offers a particular account of mistaken causal attributions of leadership that he calls the error of centralization thinking. According to Resnick (1994:3-19), there are many phenomena that exhibit evidence of co-ordination suggesting an effect of leadership that are really not examples of leadership activity at all. Rather they are the effect of actors responding to local cues. As an example, he notes Reynolds's (1987) simulations of the flocking behaviour of birds. Reynolds's computer generated birds — called boids — behave in a co-ordinated fashion, the flock separating to fly around objects and then reforming as it moves on. And yet there is no lead boid. Rather, the flock's behaviour is the result of three programmed rules for boids to act on local cues. First, separation is achieved by each boid maintaining a certain distance from its nearest flockmates. Second, the alignment or bearing of boids is achieved by each boid maintaining the average heading of its nearest flockmates. Finally, the cohesion of the flock is achieved by each boid moving towards the average position of its nearest flockmates.

Resnick's (1994:75-81) second example is the behaviour of termites. They are able to exhibit enough co-ordination to build huge and complex structures but without any termite being in charge. Gordon (1999) makes a similar point in an account of her 17-year study of harvester ants in *Ants at Work*: "The basic mystery about ant colonies is that there is no management ... There is no central control. No insect issues commands to another or instructs it to do things in a certain way" (Gordon, 1999:vii).

Resnick's (1994:119-144) third example is about markets. Although there is a vast amount of co-ordinated activity associated with buying and selling, supply and demand, no one needs to be in charge. In fact the processes of production and distribution to buyers would arguably be less efficiently accomplished if there were a central person in charge of everything.

These examples do not, of course, demonstrate that leadership is always unimportant. Rather, they invite the possibility of a more critical examination of the causes of co-ordinated behaviour that gives the appearance of being the result of leadership. Instead of assuming leadership as the default explanation, we are invited to adopt a more neutral explanatory stance.

The most recent systematic attempt to defend the adoption of just such a stance towards the assumption of leadership explanations in these circumstances, and even go beyond mere neutrality, is contained in Lakomski's *Managing Without Leadership* (2005). In addition to the use of many examples designed to counter the tendency to accord *prima facie* plausibility to leadership accounts of organized behaviour in advance of causal analysis, Lakomski in fact considers an alternative model of organization to be more plausible. Her argument is detailed, but in bare outline it runs as follows. First, the most relevant contexts in which leadership is purported to be important are relatively complex organizations. But these are also contexts where, on closer analysis, leadership acts are most likely to be distributed. A significant feature of distributed leadership is distributed cognition, which refers to the causal allocation of cognitive tasks of various sorts across an

organization's people and its artifacts. In this sense, individuals are said to have extended minds, just as someone with a pocket calculator has an extended mind. But if this more naturalistic view of cognition is adopted, if it provides

> a more defensible causal account of how humans act, interact and solve problems, then the continued use of the term 'leader' no longer carries its previously attributed properties, because causal relations are literally everywhere and include the 'leader' (Lakomski, 2005:71).

Second, at this level of organizational complexity, one can expect to see emergent properties of system. These are exactly like the emergent property of apparently leader-led flocking behaviour that derives from the multitude of distributed locally cued cognitive acts performed by all the individual boids in Reynolds's simulation, or the levels of emergent self-organization that derives from the behaviour of many individual ants in an ant colony. Lakomski's (2005:117-136) point, indeed, is that the combination of organizational complexity, distributed cognition and resulting prospects for self-organization as an emergent property, shift the explanatory onus onto leadership theorists to demonstrate the causal push and pull of their leader attributions. This, then, locates the issue of leadership effects in the empirical literature.

Leadership effects and effect sizes: empirical evidence
In the study of educational leadership, what do the large empirical studies say about the effects of principal leadership on something fundamental like student learning outcomes in schools? We shall discuss three large meta-analyses to give some sense of where the empirical findings point.

Perhaps the best known review of research in the field is that conducted by Hallinger and Heck (1998), who examined findings in "40 published journal articles, dissertation studies and papers presented at peer-reviewed conferences" from the period 1980–1995. These sources were selected on three criteria. They examined the principal's beliefs and behaviours, they provided a measure of school performance, and they included studies from a variety of countries. Finally, principal effects on school outcomes were analysed in terms of three possible models: direct effects, mediated effects, and reciprocal effects (where principals are in turn influenced by the effects of their actions).

Their findings on the direct effects of principals, from these studies, is clearly stated: "Researchers adopting this model have been unable to produce sound or consistent evidence of leadership effects on student outcomes" (Hallinger & Heck, 1998:166). Not enough studies were conducted with the required sophistication to provide a useful result for reciprocal effects. However, for mediated effects, they were able to conclude that "studies employing a mediated-effects model produced either mixed or consistent evidence of positive effects of principal leadership on school outcomes" (1988:167). The most important factor seemed to be the principal's role in framing school purposes and goals, particularly a school's vision and mission. This evidently impacted on teachers' educational expectations which in turn influenced

student learning outcomes. Nevertheless, Hallinger and Heck urge caution in interpreting the results of the studies done, because the indirect effect of principal leadership is relatively small, though statistically significant. Unfortunately, the studies do not settle the question of "the means by which principals achieve an impact on school outcomes …" (1998:186).

In a more recently conducted meta-analysis, Witziers, Bosker and Kruger (2003) selected 37 studies conducted over the period 1986–1996 on the basis of two criteria. The first required studies to have a clear conceptualization of educational leadership as well as reliable and valid measures of it. The second required the studies to "to include explicit and valid measures of student achievement …" (2003:405). Since there were very few such studies that measured indirect, or mediated effects, their focus was on direct effect models. In answering their own question, "Is educational leadership related to student achievement?" (2003:415), they conclude that …

> … in general, effect sizes are small. That is, correlations between leadership and student achievement are below .10, which implies a maximum effect size expressed as Cohen's *d* of .20. In Cohen's … terminology, this is a small effect. Although it indicates that not more than 1% of the variation in student achievement is associated with differences in educational leadership, one should bear in mind that the measures used in the studies are far from perfectly reliable and thus may lead to an underestimation of the association. (Witziers *et al.*, 2003:415).

These authors did examine five studies, including some considered by Hallinger and Heck, but in the end felt that "the evidence presented by the indirect effects model may not alter the conclusions that the tie between leadership and student achievement is weak" (2003:418).

Possibly the largest research program concerning effect sizes on student learning is that conducted by Hattie. In a published lecture, Hattie (1999) summarized the main results of his analysis of 337 meta-analyses representing some 180,000 studies involving over 50 million children. For Hattie, effect size was calculated in terms of Cohen's *d* which measures the standardized difference between two groups. Thus,

$$d = (M_1 - M_2)/SD$$

where M_1 is the mean of the "post" (after treatment) group, M_2 is the mean of the "pre" (before treatment) group, and *SD* is the standard deviation (of either group) or the average of the standard deviations, or more commonly, the pooled standard deviation of the groups. In terms of interpretation into actual student learning achievements, an effect size of 1.00, or one standard deviation, would advance a student's learning by about one year, or "average students receiving that treatment would exceed 84% of students not receiving that treatment" (Hattie, 1999:3; see also Hattie, 2005).

One result of this research was that the average effect size on student learning of any innovation was .40, with large effects being recorded for rein-

forcement (1.13), students' prior cognitive ability (1.04) and instructional quality (1.00) and negative effects being recorded for television (–.12) and retention to same grade (–.15). In general, the largest effect sizes were for factors that were most closely linked to actual teaching and learning processes, while those of a structural nature tended to fall below the average. Therefore the aims and policy of the school had an effect size of .24, ability grouping .18, and finances and money .12. Although these structure-related numbers indicate some modest effect, they are well below the average effect size and substantially below the primary causes of student learning achievement which has to do with teaching rather than leadership.

During the 1980s, the dominant model of principal leadership, namely, that of the principal as an instructional leader, gave way in the 1990s, under pressure from many governments for major school reform, to a new consensus for transformational leadership that was concerned with effecting change. The irony is that this shift is precisely in the direction away from the sorts of factors on Hattie's list that make for large effects on student learning. And in an educational environment that is now demanding a greater focus on student learning outcomes there is a renewed emphasis on reverting to instructional models of school leadership. (Hallinger, 2003; Mulford & Johns, 2004; Robinson, 2006).

There is, of course, scope for further studies, further analysis of the concept of leadership, and the development of still more sophisticated statistical machinery for analysing the results of new research designs. Suffice it to note that as things stand at the moment the empirical evidence for significant principal leadership effects on student learning is still equivocal and certainly fails to match the rhetoric of the common-sense consensus that champions its importance.

Resolving the paradox: some suggestions

There are several possible ways for resolving the paradox of a discrepancy between the common-sense consensus and the empirical studies. One way is simply to acknowledge that the consensus is false and that leadership is a much over-rated construct. Instead, the real causal work is being done by distributed, local co-ordinated action by many people responding to local cues, much as Lakomski argues. But another possibility is that the statistical studies are failing to capture leadership effects because of a lack of variability in key leadership variables.

Consider the following parallel case. Research is conducted on a range of naturally occurring variables to determine the height to which certain plants will grow. These will include soil types and nutrients, presence of water, temperature, altitude, climate, hours of sunshine, and presence of carbon dioxide (CO_2). However, since the proportion of CO_2 varies little compared with many of the other factors, it will make little or no contribution to the development of a causal model for explaining the variability of plant height. (Evers, 2001:104-106). But we know, by varying levels of CO_2 artificially beyond proportions in naturally occurring settings, that it has a major effect on plant

growth, and further, that that effect has been integrated into detailed explanatory models of plant growth that can sustain counterfactuals concerning a wide range of CO_2 levels. So despite lack of naturally occurring variability we can say that if the amount of CO_2 were to increase in the future — perhaps due to the increasing build-up of carbon emissions — then this will have a significant impact on plant growth in the world.

There are a number of good reasons for such a lack of variability in school leadership variables. First, the skill-based strictures on entry to the principalship may have a levelling effect. Just as we would not expect lack of pilot training to correlate highly with crashes of commercial airliners, so the system for promoting people into school leadership positions seems to be specifically geared to prevent a similar correlation. Second, many of the actions that school leaders are expected to perform are defined constitutively as leadership roles. That is, they are built into the nature, or definition, of the job that is defined for the jurisdiction. Third, a considerable number of problems that school leaders face are relatively well structured, which means that scope for a variety of possible solutions, or courses of action, is limited. And finally, the distributed nature of leadership, particularly where principal effects are mediated or indirect, renders variability partly a feature of the pattern of distribution rather than just a property of the individual principal.

Strictly speaking, these considerations do not show the importance of leadership. They merely show that if it were important it need not show up as important in the sorts of empirical studies that figure in the main meta-analyses in the literature. Unfortunately, it was the large scale statistical studies that were supposed to provide such evidence.

An alternative possibility is to look to case studies of individual leaders for evidence of the effects of leadership. Biographies and autobiographies would provide a similar basis for evidence of effects. Nevertheless, despite the prospect of a wealth of fine-grained detail that purports to connect individual actions to caused outcomes, some methodological caution needs to be exercised. Consider the problem of distinguishing between the actions of person *X* and the actions of a leader. At issue is the fact that while person *X* is an individual without whose actions certain consequences would arguably not have occurred, "leader" is a general terms that is meant to apply to a whole class of individuals. How can we infer beyond the claim that person *X* matters, to the conclusion that leaders matter? The usual way would be to locate *X*'s actions within the nexus of constitutive, regulative, and institution-wide similarities that permit generalization by virtue of defined roles, patterns of collective action and the structure of common problems associated with leadership, noting along the way that these are the very things that limited variability (Evers & Wu, 2006). But then the leader, in this sense, begins to look a bit like the lead-boid, in that the relevant attributes significant for leadership are carried by anyone who happens to be there in that capacity.

Another strategy for defending the importance of educational leadership as a means of promoting the achievement of student learning outcomes in the face of ambiguous empirical evidence is to demonstrate some conceptual or

methodological link between leading and outcomes. Robinson (2006) proposes a particular way of doing this. She begins by citing a range of meta-analyses that purport to present overviews of findings on leadership and student learning outcomes, noting that "these compilations all report a paucity of empirical evidence about the impact of leadership on the core business of schooling". The key difficulty, she observes, is the "very long causal chain between how a principal thinks and acts and student outcomes" (2006:64).

Methodologically, this difficulty is compounded by the way in which many theories of leadership have been developed. The problem has been that leadership is seen as a generic property, with educational leadership being viewed as simply leadership that takes place in educational organizations. With generic properties thus proposed in order to deal with leader-follower relationships, vision and mission, school policy, budget and management, and the like, it's not surprising that there's a mismatch between the explanatory power of these theories and the matter of student learning outcomes. (Robinson, 2006:65).

Robinson's proposal is to reverse the process of theory building in educational leadership by engaging in backward mapping. The task is to begin with what is known about how teachers effectively promote student learning, since most school learning occurs in classrooms. The next step is to explore the conditions under which effective teaching and learning occur. Then, moving further backwards, the next task is to explain the role of principals in creating and sustaining these conditions. A backward mapping approach to leadership theory building, with student learning as its starting point would thus, by its nature, make student learning outcomes the core of a theory of educational leadership. According to Robinson (2006:68-70), the sort of knowledge that school leaders would need to possess would be quite different from that prescribed by generic models. Principals should have in-depth knowledge of at least one curriculum area, of how children learn that subject matter, of how it is best taught, and of how teachers can be trained to teach that subject matter. But she also hints at the difficulties in meshing a traditional domain of teacher professional autonomy, namely, what goes on in their classroom, with the potential for considerable top-down intervention into this domain by the principal.

A further issue is that when all the backward mapping driven theory building has been done, there still remains the empirical question of whether school leaders make an important contribution to student learning outcomes. Having a methodology focused on looking for gold does not mean that gold will be found, but merely that the methodology may have a better chance of finding it.

Contingencies and theory building

We are in sympathy with Robinson's methodological approach in seeing the way forward as a matter of procedures for theory building. Certainly, backward mapping from teaching and learning would place a powerful set of constraints on any emerging theory of educational leadership. However, the

effect of these constraints needs to be traded off against the many contingencies that can affect the role of educational leaders in both their constitution and in their interpretation. Hallinger (2003:346) makes the point "that it is virtually meaningless to study principal leadership without reference to the school context". And by school context, he's referring to such variables as "student background, community type, organizational structure, school culture, teacher experience and competence, fiscal resources, school size, and bureaucratic and labour organization" (2003:346). The upshot is that it's an open question whether there is any one theory of educational leadership that may be appropriate across the range of possible contingencies.

Our alternative suggestion is to focus on the methodology of theory building but at the level of the individual school leader as a theorist; to see principals, teachers, and others in schools as actively involved in their own knowledge building in order to solve the problems of practice and to place their work in a context that may give it meaning and purpose. There are several reasons for this approach, although in general they boil down to the fact that our social science is not strong enough to provide advice on what is to be done in many particular organizational situations. Moreover, social actors are often unaware of relevant information, and are cognitively limited in the sense of possessing bounded rationality in dealing with it if it was all available.

In a series of studies on teachers' professional knowledge development, Chitpin and Evers (2005) argued that, under modest conditions, it is more feasible to see teachers developing their knowledge as a form of informed trial and error constrained by progress (or otherwise) in the solution of problems (see also Evers & Chitpin, 2003; Evers, in press; Evers, forthcoming.) In particular, it was found that such learning could be modelled as a series of "Popper Cycles", successive repetitions of the basic schema that Popper (1979: 121) argued was at the core of the growth of scientific knowledge:

$$P_1 \Rightarrow TT_1 \Rightarrow EE_1 \Rightarrow P_2$$

The schema prescribes that we begin with problems (P_1), propose solutions or tentative theories (TT_1), test the solutions for errors (EE_1), and move on to a new or more refined problem (P_2), although if no progress has been made on the original problem, the schema suggests that it be approached with a new tentative theory. The key to the growth of professional knowledge is to formulate relatively small scale problems with some precision, propose theories that are formulated clearly enough to be empirically tested, and in engaging in error elimination, or testing, to have clear standards as to what counts as a difficulty for the tentative theory. It is a formula for critical learning, for incremental knowledge growth, or theory building, that is guided by the demand to solve the particular problem, or set of problems, at hand. The example in Table 1 demonstrates how this model works.

Table 1   Popper Cycles (PC) for an Integrated Science (IS) project
(Example provided by Terence Wang, MEd student, The University of Hong Kong)

PC_1	PC_2	PC_3	PC_4	PC_5
P_1: How do we motivate junior IS students to enjoy learning Newton's Laws?	P_2: How to motivate IS students to take the Balloon Racer project seriously?	P_3: How do we motivate all the students to take part in the project whole-heartedly?	P_4: How do we encourage all students to seriously participate in the project without feeling too much shame/pressure if it doesn't work?	P_5: How do we ensure individuals in the groups don't slack off?
TT_1: Involve them in hands-on projects to motivate them.	TT_2: Provide marks to assess the project.	TT_3: Make it a competition not only within the class but between the classes.	TT_4: Make it a group project where the whole group shares the responsibilities and the assessment.	TT_5: Ask group members to provide comments/ assessment on group members and incorporate it into the project grade.
EE_1: Students enjoyed spending time building "Balloon Racer" cars that demonstrated Newton's Laws but they did not take the task seriously.	EE_2: Some under achieving students did not care about marks and some over-achievers only did the project for the marks.	EE_3: Even the underachievers tried hard due to a sense of pride for their class. However, some individuals experienced too much stress (and potential shame) in trying to build a functional product.	EE_4: Nearly all students are fully engaged in the project but some individuals slack off in the groups.	

Notice that in the beginning, the teacher does not have a complete worked out solution to the problem (P_1). In a classroom there are many contingencies. But by behaving as a critical learner, trying out various ideas and keeping a close eye on whether they actually work, the teacher's knowledge is built up in an epistemically progressive way. In the face of contingencies, unpredictability, fallible theory, and limited knowledge, the knowledge building process takes the place of the ideal of a finished theory. But, nevertheless, the teacher's knowledge has grown through this process, constrained as it is by the demand, at every step, to solve the successive problems.

Transposed to the issue of leadership theory, the question of the extent to which educational leaders play a major part in the promotion of student learning is something that needs to be read off from the particular theories that leaders critically build up within the particularities of their own problem-solving organizational contexts. Perhaps in some schools there is a powerful culture of teacher autonomy and professionalism, and resulting high levels of student learning achievement. There, the leader's action and decision-guiding body of tentative theory will conceivably contain evidence of a different pattern of causal chains indicating how causal responsibility for student achievement may be distributed, compared with the tentative theories of leaders in quite different circumstances.

Conclusion

One result of the above argument is that the first premise with which we began our formulation of a paradox of leadership, namely, "Leadership is vitally important as a cause for setting and achieving organizational goals", is too simple a formulation. Perhaps it is extremely important, perhaps it is not quite so important. This is a matter that is affected by contingencies. Another result is that this may be a key reason why the large-scale empirical studies commented on earlier are so equivocal. They are asking, and attempting to answer, the wrong question.

References

Cetron M & Gayle M 1991. *Educational Resistance: Our Schools at the Turn of the Century.* New York: St. Martins Press.

Chitpin S & Evers CW 2005. Teacher Professional Development as Knowledge Building: A Popperian Analysis. *Teachers and Teaching: Theory and Practice*, 11:419-433.

Conzemius A 1999. Ally in the Office. *Journal of Staff Development*, 20:31-34.

DeBevoise W 1984. Synthesis of research on the principal as instructional leader. *Educational Leadership*, 41:14-20.

Evers CW 2001. Knowing How to Lead: Theoretical Reflections on Inference to the Best Training. In: Wong KC & Evers CW (eds). *Leadership for Quality Schooling: International Perspectives*. London: Routledge/Falmer.

Evers CW (in press). Lifelong Learning and Knowledge: Towards a General Theory of Professional Inquiry. In: Aspin DN (ed.). *Philosophical Perspectives on Lifelong Learning.* Dordrecht: Springer.

Evers CW (forthcoming). Culture, Cognitive Pluralism and Rationality. *Educational Philosophy and Theory*.

Evers CW & Chitpin S 2003. From Uncertainty to Knowledge Growth Through Individual Reflection. In: Crowther F (ed.). *Teachers as Leaders in a Knowledge Society: Australian College of Educators Yearbook*. Canberra: Australian College of Educators.

Evers CW & Wu EH 2006. On Generalizing From Single Case Studies: Epistemological Reflections. *Journal of Philosophy of Education*, 40:511-526.

Fullan M 1993. *Change Forces: Probing the Depths of Educational Reform*. London: Falmer Press.

Fullan M 1999. *Change Forces: the Sequel*. London: Falmer Press.

Fullan M 2001. *The New Meaning of Educational Change*. New York: Teachers College Press.

Gordon D 1999. *Ants at Work*. New York, NY: W.W. Norton.

Hallinger P 2003. Leading Educational Change: Reflections on the Practice of Instructional and Transformational Leadership. *Cambridge Journal of Education*, 33:329-351.

Hallinger P & Heck RH 1998. Exploring the Principal's Contribution to School Effectiveness: 1980–1995. *School Effectiveness and School Improvement*, 9:157-191.

Harris A & Mujis D 2005. *Improving Schools through Teacher Leadership*. Berkshire, England: Open University Press.

Hattie JA 1999. *Influences on Student Learning*. Available at http://www.arts.auckland.ac.nz/staff/index.cfm?P=8650

Hattie JA 2005. The Paradox of Reducing Class Size and Improving Learning Outcomes. *International Journal of Educational Research*, 43:387-425.

House RJ, Hanges PJ, Ruiz-Quintanilla SA, Dorfman SA, Javidan M & Dickson M 1999. Cultural influences on leadership and organizations: Project GLOBE. In: Mobley WH, Gessner MJ & Arnold V (eds). *Advances in Global Leadership*. Stamford, CT: JAI Press.

Hoy WK & Miskel CG 2001. *Educational Administration Theory Research, and Practice*. Boston: McGraw Hill.

Lakomski G 2005. *Managing Without Leadership: Towards a Theory of Organizational Functioning*. Oxford: Elsevier.

Leithwood K, Jantzi D, Earl L, Watson N, Levin B & Fullan M 2004. Strategic leadership for large-scale reform: the case of England's national literacy and numeracy strategy. *School Leadership & Management*, 24:57-79.

Leithwood K, Jantzi D & Steinbach R 1999. *Changing Leadership for Changing Times*. Buckingham: Open University Press.

Mauriel JJ 1998. *Strategic Leadership for Schools: Creating and Sustaining Productive Change*. San Francisco, CA: Jossey Bass.

Millard RM 1991. *Today's Myths and Tomorrow's Realities: Overcoming Obstacles to Academic Leadership in the 21st Century*. San Francisco,CA: Jossey Bass.

Mulford B & Johns S 2004. Successful School Principalship. *Leading and Managing*, 10:45-76.

Pfeffer J 1977. The Ambiguity of Leadership. *The Academy of Management Review*, 2:104-112.

Popper KR 1979. *Objective Knowledge*. Oxford: Oxford University Press.

Resnick M 1994. *Turtles, Termites, and Traffic Jams: Explorations in Massively Parallel Microworlds*. Cambridge, MA: MIT Press.

Reynolds C 1987. Flocks, Herds and Schools: A Distributed Behaviour Model. *Computer Graphics*, 21. Available at: http://www.red3d.com/cwr/boids/

Robinson VMJ 2006. Putting Education Back into Educational Leadership. *Leading & Managing*, 12:62-75.

Senge P 1990. *The Fifth Discipline*. New York: Doubleday.
Sergiovanni T 1996. *Leadership for the Schoolhouse*. San Francisco, CA:
    Jossey-Bass.
Sergiovanni T 2001. *Leadership: What's in it for Schools?* London: Routledge Falmer.
Troen V & Boles K 1994. A Time to Lead. *Teacher Magazine*, 5:40-41.
Witziers B, Bosker RJ & Kruger ML 2003. Educational Leadership and Student
    Achievement: The Elusive Search for an Association. *Educational Administration
    Quarterly*, 39:398-425.
Yukl GA 1998. *Leadership in Organizations*. Upper Saddle River, NJ: Prentice Hall.

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