

**Leaders' Problem-Solving Capabilities:
Exploring the "Quick Fix" Mentality**

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Abstract

The resolution of complex problems is critical to leaders' ability to achieve their improvement goals. Much of this problem solving is carried out through face to face conversations with those who are implicated in the situation. This paper draws on theories of interpersonal effectiveness and negotiation to develop a process model of quality problem solving based on disclosing and checking the validity of assumptions about the problem. Analyses of conversation transcripts of 27 leaders revealed little evidence that leaders explicitly tested assumptions, especially their causal reasoning. Instead, leaders typically assumed the validity of their causal assumptions and offered or solicited ideas about how to fix the problem. Implications for further research on leaders' capability in social problem-solving are discussed.

Purposes

Leaders' effectiveness fundamentally depends on their ability to overcome the complex problems that stand in the way of achieving their improvement goals (Mumford, Zaccaro, Harding, Jacobs, & Fleishman, 2000). For example, leaders who are committed to achieving more equitable and socially just outcomes for their students may need to resolve entrenched problems of deficit thinking in staff and students, inappropriate curricula and student disengagement if their goals are to be achieved (Davis & Harrison, 2013; Riehl, 2000, 2005).

Such problems are complex because they are ill-structured – that is, it is not clear what information is relevant and what criteria are appropriate for judging solution adequacy (Simon, 1973; Voss & Post, 1988). Such problems are also social, because resolving them requires the coordinated effort of individuals.

The purpose of this paper is to examine the quality of leaders' real-world problem-solving as they initiate conversations with those whose cooperation is essential for resolving problems of equity and excellence. The quality of leaders' problem-solving matters because the decisions they make about what constitutes a problem and how it should be addressed have important ethical and educational consequences for others' lives (Dempster & Berry, 2003). Resources may be wasted and students' learning stymied because leaders have rushed to fix a problem rather than test and check their assumptions about its causes and possible solutions (Newmann, Smith, Allensworth, & Bryk, 2001).

In contrast to the majority of research on leaders' problem-solving, this study involves the real problems of each participating leader, rather than standardized scenarios (Allison & Allison, 2003; Zaccaro, Mumford, Connelly, Marks, & Gilbert, 2000). Furthermore, the problems are addressed in conversation with relevant colleagues rather than through individual reflection (Spillane, White, & Stephan, 2009). This research context enables investigation of educational leaders' capability in solving the real problems that hamper their efforts to achieve important goals (Robinson, 2001).

Theoretical framework

A process rather than outcomes-based concept of quality problem-solving was developed that was applicable to the variety of problems that were the focus of the leaders' conversations. We began by using empirical research which compares problem-solving strategies of experts and non-experts in a given domain (Brenninkmeyer & Spillane, 2008; De Dreu, Beersma, Steinel, & Van Kleef, 2007; Leithwood & Stager, 1989). Experts bring structure to otherwise ill-structured problems by interpreting them in terms of the cognitive schema they have developed from prior experience with similar problems. These schema

enable them to understand the problem in terms of underlying principles and mechanisms that provide clues about its possible causes and solutions.

Although these interpretive processes reduce cognitive load and enable faster decision-making, their downside is the possibility of bias and error (Kahneman, 2011). Taken-for-granted assumptions about the nature of the problem and how to fix it may contribute to iterative cycles of ineffective improvement strategies (Hess, 1999, 2009). Quality problem-solving requires leaders to recognize the possibility of error, slow down and switch to a more deliberative problem-solving mode, in which the validity of taken-for-granted assumptions is explicitly checked (Kahneman, 2011). The challenge for leaders is not to eliminate their assumptions, for limitations of our memory and information processing capacity make this impossible, but to eliminate the assumption that their assumptions are correct.

We drew on theories of interpersonal effectiveness (Argyris, 1991; Argyris & Schon, 1974) and theories of negotiation, to identify behavioral indicators of when leaders tested and checked, rather than assumed the validity of their assumptions. For Argyris and Schon, the pursuit of validity is evidenced by such interpersonal behaviors as: providing grounds for one's point of view, rather than just asserting it, and making meaning clear by illustrating abstract ideas. Such behaviors increase validity by enabling problem-solvers to check the quality of inferential reasoning and the extent to which they understand abstract ideas in similar ways (Argyris & Schon, 1996). Valid information about the other's point of view is pursued by summarizing and checking how one has understood the other and by asking genuine rather than loaded or rhetorical questions (Le Fevre & Robinson, 2014). Leaders who seek to increase the validity of their thinking treat difference and disagreement as an

opportunity to test the relative merit of competing points of view, rather than to persuade the other to their way of thinking (Robinson, Sinnema, & Le Fevre, in press)

Problem-solvers bring hundreds of assumptions to any conversation and it is cognitively and practically impossible to test them all. We focus in this paper on whether leaders tested their main assumptions i.e. those whose validity is critical to the quality of problem-solving. Three types of assumptions were treated as critical. The first type involves assumptions about the presence of a problem. Since gaining agreement that there is a problem is an important initial step in recruiting others to the problem-solving process (Mumford et al., 2000; Nickles, 1981), we noted whether the leader disclosed and checked their assumption that the situation constituted a problem. Assumptions about the problem's cause constituted the second main type and assumptions about the solution the third type of main assumption.

Methods and Data Sources

Twenty-seven aspiring and experienced educational leaders, enrolled in a graduate course in educational leadership, participated in the study. The majority of these leaders were female, aged between 30 and 50 years and held a team leader or senior leader role in an elementary school. They were asked to select a concern which was important to them, and to seek the consent of the person most directly involved to record a conversation in which they attempted to address the problem. Leaders transcribed their own conversations and were asked to recall any thoughts and feelings they had but did not express during the conversation (procedure adapted from Argyris and Schon, 1974). These unexpressed thoughts were written alongside the lines of the transcript to which they applied.

Most of the 27 problems were about the other's teaching, relationships with students

and colleagues, or effectiveness in non-teaching aspects of their jobs. On average, leaders rated their problems as between "very" and "extremely" important to resolve and rated their previous attempts as "minimally effective". Given this history, these problems provide an authentic context in which to test leaders' ability to interrupt and check the validity of their own and others' taken for granted assumptions about a problem.

The first and second authors used the annotated transcripts to identify each main assumption and record it in a coding template under a separate section for each of the three assumption types. They also recorded any actions taken by the leader to check the validity of the identified assumptions. Assumptions were identified from the conversation itself and from the leader's unexpressed thoughts. The material recorded in each section was then reviewed and a holistic binary judgment was then made about whether or not the validity of the assumptions had been sufficiently checked. When repeated across the three sections, this scoring procedure yielded scores of zero to three for each leader. A second trained coder independently scored 14 of the 27 transcripts and the inter-coder agreement score was a satisfactory .83 (Krippendorff's alpha). Due to the non-independence of the data, three separate chi square analyses were used to test whether the probability of testing the validity of each assumption type differed from chance.

This quantitative analysis of the quality of problem-solving was enriched with qualitative thematic analyses of the cognitive and behavioral strategies leaders used to test their assumptions. Themes were derived from the memos written independently by each coder subsequent to scoring each transcript.

Findings

The frequencies in Table 1 suggest that leaders were much more likely to assume rather than test the validity of the main assumptions they made about their selected problem. There were differences, however, across the three types of assumption. While the probability that leaders would test their assumption about the presence of a problem was significantly greater than chance, ($\chi^2(1, N = 27) = 6.259, p = .012$), the reverse was true for assumptions about the problem's cause ($\chi^2(1, N = 27) = 10.704, p = .001$). The probability that leaders would test their assumptions about solutions was no different from chance ($\chi^2(1, N = 27) = 0.926, p = .336$).

Table 1

Number of Leaders Testing the Validity of Three Types of Problem Assumption (n = 27)

| Type of Assumption | Validity | |
|--------------------|----------|------------|
| | Tested | Not Tested |
| Problem state | 20 | 7 |
| Problem cause | 5 | 22 |
| Problem solution | 16 | 11 |

Leaders' problem-solving typically involved gaining agreement about the existence of a problem and moving straight to a discussion of how it could be fixed, with little if any inquiry into its causes. Our thematic analyses suggest two possible reasons for the quick focus on

solution strategies. First, leaders tended not to disclose their causal assumptions, especially when those involved attributions of poor performance, such as ineffective teaching practice or classroom management. Causal reasoning tended to be indirectly communicated through the discussion of solution strategies. For example, a leader's suggestion to be "more growly" with a difficult student could be interpreted as implying that the teacher has been too lax in her approach to date. This pattern suggests a tight linkage between leaders' interpersonal skills and the quality of their problem-solving. Causal talk is more interpersonally challenging than solution talk, especially when the causal possibilities have implications for the other's capability. Leaders' unexpressed thoughts indicated they were quick to make attributions about the other's capabilities but reluctant to disclose and test the validity of those attributions. This reluctance meant that their causal reasoning was either privately tested or, more often, not tested at all.

The second possible reason for moving quickly to the discussion of solutions may be that leaders felt it was their job to fix the problem. The unexpressed thoughts of some leaders indicated they felt under pressure to provide support and, for them, support involved offering strategies that would fix the problem rather than collaboratively inquiring into the problem.

In theory, conversations which involve significant disagreements between the parties provide stronger clues about the need to interrupt and check taken-for-granted assumptions than conversations in which there is substantial agreement. Despite this, there was little evidence in our transcripts that difference cued leaders to test the validity of their thinking. Instead, leaders' thoughts indicated that difference was treated as an obstacle to be overcome rather than an opportunity to test the relative validity of competing viewpoints (Robinson, Sinnema, & Le Fevre, in press).

Scholarly significance

This study offers rare data about the quality of leaders' problem-solving processes in conversations with those whose behavior, attitude or effectiveness causes concern. Despite the current emphasis on leaders' evidence-based inquiry, (Datnow & Park, 2014; Earl & Katz, 2002), we found little evidence that leaders adopted an inquiry stance in these conversations. Rather than treat their causal reasoning as a hypothesis, they typically assumed its validity and then offered solutions. For these leaders at least, social problem-solving involved gaining agreement that there was a problem and then gaining agreement with their view about how to fix it.

Although leaders' annotated transcripts typically included attributions about the other party's contribution to the problem, explicit discussion of such causal reasoning was rare. This may be because leaders' attributions about the other party were often framed in such negative and judgmental ways that their disclosure would have been hurtful and rude. These findings suggest a close connection between leaders' interpersonal and problem-solving capabilities. Leadership is a process of social influence and preparation for it should involve the integration of these two capabilities.

How malleable are the skills involved in social problem solving? While cognitive researchers are pessimistic about the possibility of gaining more control over our automatic reasoning processes (Kahneman, 2011), a few researchers in education and business have shown how intensive interventions that target both cognition and behavior can build leaders' capability in doing so (Argyris, 1993; Robinson, Sinnema, & Le Fevre, in press). Such leadership intervention research is central to helping leaders resolve the problems that stop them achieving their goals for greater equity and excellence.

References

- Allison, D. J., & Allison, P. A. (2003). Both ends of a telescope: Experience and expertise in principal problem solving. *Educational Administration Quarterly*, 29(3), 302-322.
- Argyris, C. (1991). Teaching smart people how to learn. *Harvard Business Review*, 69(3), 99-109.
- Argyris, C. (1993). Education for leading learning. *Organizational Dynamics*, 21(3), 5-17.
- Argyris, C., & Schon, D. (1974). *Theory in practice: Increasing professional effectiveness*. San Francisco: Jossey-Bass.
- Argyris, C., & Schon, D. (1996). *Organizational learning II: Theory, method and practice*. Reading, MA: Addison Wesley.
- Brenninkmeyer, L. D., & Spillane, J. P. (2008). Problem-solving processes of expert and typical school principals: A quantitative look. *School Leadership and Management*, 28(5), 435-468.
- Datnow, A., & Park, V. (2014). *Data-driven leadership*. San Francisco, CA: Jossey Bass.
- Davis, T., & Harrison, L. M. (2013). *Advancing social justice: Tools, pedagogies, and strategies to transform your campus*. San Francisco, CA: Jossey-Bass.
- De Dreu, C. K. W., Beersma, B., Steinel, W., & Van Kleef, G. A. (2007). The psychology of negotiation: Principles and basic processes. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (2nd ed., pp. 608-629). New York: Guilford Press.
- Dempster, N., & Berry, V. (2003). Blindfolded in a minefield: Principals' ethical decision making. *Cambridge Journal of Education*, 33, 457-477.
- Earl, L., & Katz, S. (2002). Leading schools in a data-rich world. In K. Leithwood & P. Hallinger (Eds.), *Second international handbook of leadership and administration* (pp. 1003-1022). Dordrecht: Kluwer Academic.
- Hess, F. M. (1999). *Spinning wheels: The politics of urban school reform*. Washington DC: The Brookings Institution.
- Hess, F. M. (2009). Cages of their own design. *Educational Leadership*, 67(2), 29-33.
- Kahneman, D. (2011). *Thinking fast and slow*. New York: Farrar, Straus and Giroux.
- Le Fevre, D. M., & Robinson, V. M. J. (2014). The interpersonal challenges of instructional leadership: Principals' effectiveness in conversations about performance issues. *Educational Administration Quarterly*. doi:10.1177/0013161x13518218
- Leithwood, K. A., & Stager, M. (1989). Expertise in principals' problem solving. *Educational Administration Quarterly*, 25(2), 126-161.
- Mumford, M. D., Zaccaro, S. J., Harding, F. D., Jacobs, T. O., & Fleishman, E. A. (2000). Leadership skills for a changing world: Solving complex social problems. *The Leadership Quarterly*, 11(1), 11-35. doi: 10.1016/S1048-9843(99)00041-7
- Newmann, F. M., Smith, B., Allensworth, E., & Bryk, A. S. (2001). Instructional program coherence: What it is and why it should guide school improvement policy. *Educational Evaluation and Policy Analysis*, 23(4), 297-321.
- Nickles, T. (1981). What is a problem that we might solve it? *Synthese*, 47(1), 85-118.
- Riehl, C. J. (2000). The principal's role in creating inclusive schools for diverse students: A review of normative, empirical, and critical literature on the practice of educational administration. *Review of Educational Research*, 70(1), 55-81.

- Riehl, C. J. (2005). Educational leadership in policy contexts that strive for equity. In N. Bascia, A. Cumming, A. Datnow, K. Leithwood & D. Livingstone (Eds.), *International handbook of educational policy: Part two* (Vol. 13). Netherlands: Springer.
- Robinson, V. M. J. (2001). Embedding leadership in task performance. In K. Wong & C. Evers (Eds.), *Leadership for quality schooling: International perspectives* (pp. 90-102). London: Falmer Press.
- Robinson, V. M. J., Sinnema, C., & Le Fevre, D. M. (in press). From persuasion to learning: An intervention to improve leaders' response to disagreement. *Leadership & Policy in Schools*
- Simon, H. (1973). The structure of ill-structured problems. *Artificial Intelligence*, 4, 181-201.
- Spillane, J. P., White, K. W., & Stephan, J. L. (2009). School principal expertise: Putting expert-aspiring principal differences in problem solving processes to the test *Leadership and Policy in Schools*, 8(2), 128-151. doi: 10.1080/15700760902737188
- Voss, J. F., & Post, T. A. (1988). On the solving of ill-structured problems. In M. T. H. Chi, R. Glaser & M. J. Farr (Eds.), *The nature of expertise* (pp. 261-285). Hillsdale, N.J.: Lawrence Erlbaum.
- Zaccaro, S. J., Mumford, M. D., Connelly, M. S., Marks, M. A., & Gilbert, J. A. (2000). Assessment of leader problem-solving capabilities. *The Leadership Quarterly*, 11(1), 37-64. doi:10.1016/S1048-9843(99)00042-9