Georgia State University

ScholarWorks @ Georgia State University

Educational Policy Studies Faculty Publications | Department of Educational Policy Studies

1-13-2023

How Can Principals Lead in the School Improvement Planning Process? Reducing Biases in Shared Decision Making

David E. DeMatthews
University of Texas at Austin, Ddematthews@austin.utexas.edu

Yinying Wang
Georgia State University, ywang103@gsu.edu

Follow this and additional works at: https://scholarworks.gsu.edu/eps_facpub

 Part of the Education Commons, and the Education Policy Commons

Recommended Citation

DeMatthews, D., & Wang, Y. (2023). How can principals lead in the school improvement planning process? Reducing biases in shared decision-making. The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 96(2), 43-51. doi: https://doi.org/10.1080/00098655.2022.2163971.

This Article is brought to you for free and open access by the Department of Educational Policy Studies at ScholarWorks @ Georgia State University. It has been accepted for inclusion in Educational Policy Studies Faculty Publications by an authorized administrator of ScholarWorks @ Georgia State University. For more information, please contact scholarworks@gsu.edu.

How Can Principals Lead in the School Improvement Planning Process? Reducing Biases in Shared Decision Making

David E. DeMatthews
University of Texas at Austin
Ddematthews@austin.utexas.edu

Yinying Wang
Georgia State University
Ywang103@gsu.edu

How Can Principals Lead in the School Improvement Planning Process? Reducing Biases in Shared Decision-Making

Abstract: School improvement plans are strategic documents most schools complete on an annual basis. Research on school improvement planning highlights that high-quality plans contribute to student achievement gains, but many plans are of poor quality. Principals serve in a critical role within the school improvement process. In this article, we review research on decision-making and biases to provide a set of recommendations to improve the school improvement planning process. Specifically, we highlight how a set of biases can contribute to flawed planning that reduces the likelihood that the school improvement plan will be comprehensive, strategic, and useful. We also include a set of definitions and "planning guardrails" principals can use when developing a school improvement team and facilitating the school improvement planning process.

School improvement plans (SIPs) are required in school districts across the United States. Principals are tasked with developing SIPs annually in collaboration with a school improvement team. Proponents of school improvement planning recognize immense and context-specific challenges to reform, which require careful study, prioritizing, implementing, and monitoring (Bryk et al., 2015). Critics of SIPs argue how such approaches are wasteful of time and resources, rigid and unable to respond to emergent conditions, and place undue pressure and blame on educators for broader social problems (Bell, 2002; White & Noble, 2020). While we recognize some schools may complete a SIP out of bureaucratic compliance, we assume that most schools seek to develop high-quality plans and that many SIPs fail because decision-making biases go unnoticed in the planning and development process. In decision-making literature, problematic decision-making processes can contribute to poorly developed and implemented plans (Wang, 2021b). SIPs are made up of a set of collectively made decisions, and a failure to develop and implement a high-quality SIP might indicate something has gone awry during the decision-making process.

In this article, we explore what can go wrong in SIP decision-making processes. We draw on psychological literature with a focus on mental shortcuts (also known as heuristics) and biases involved in the decision-making processes (Busenitz & Barney, 1997; Dale, 2015; Eberhardt, 2019; Kahneman, 2013). We begin with a brief overview of literature focused on SIPs. Then, we define and describe how heuristics contribute to biased decision-making. Next, we provide a set of SIP pre-planning, development, and implementation and evaluation recommendations to reduce biases. We primarily focus on the role of principals in reducing biases given their entrusted power to create SIP teams, and their necessary engagement and facilitation throughout the SIP process.

Literature Review: SIPs

Since the 1970s and 80s, policymakers and researchers have emphasized the importance of formal, strategic planning, particularly in low-performing schools (Crandall et al., 1986; Lezotte & Bancroft, 1985; Mackenzie, 1983). Researchers found that effective schools shared an array of characteristics: quality instruction, instructional focus, safe teaching and learning climate, high expectations, and a system of ongoing assessment to track student progress (Bryk et al., 2015; Edmonds, 1982). These findings highlighted the important role principals played in planning and schoolwide improvement efforts. The accountability imposed by the Every Student Succeeds Act has called for principal-led school improvement planning, particularly in schools labeled as "underperforming," "failing," or "turnaround." Thus, school improvement planning has become a core function of the principalship, which is reflected in Standard 10 of the Professional Standards for Educational Leaders (National Policy Board of Educational Administration, 2015). Standard 10 emphasizes that effective principals "engage others in an ongoing process of evidence-based inquiry, learning, strategic goal setting, planning, implementation, and evaluation for continuous school improvement" (p. 18). Many principal preparation programs offer courses in school improvement in which students read a selection of school improvement planning books (e.g., Desravines et al., 2016) and create mock SIPs (Bickmore et al., 2021).

The principal leads a school improvement team to develop a SIP, which is often comprised of teachers, assistant principals, instructional coaches, and parents. The team often meets in the late spring or summer to review the prior year's SIP and the most recent student and school outcomes data. For example, the team might review testing, attendance, and discipline data disaggregated by grade, race, socioeconomic status, and whether the student receives special

education and/or bilingual education services. They could also review parent, teacher, and student climate surveys. The team evaluates these data to determine how the school progressed toward last year's goals. Next, the SIP team creates new goals with aligned actions and strategies, along with measurable benchmarks (e.g., short-cycle goals by semester or another time interval) to track how the goals will be progress monitored in the upcoming school year or cycle (Meyers & VanGronigen, 2019).

High-quality SIPs have been associated with enhanced student outcomes through nurturing organizational conditions that facilitate high levels of student achievement (Kruse, 2000; Fernandez, 2011). However, high-quality SIPs tend to be less common relative to those of poor or average quality. In a study of 206 SIPs in the Los Angeles Unified School District, many plans were described as poor or average quality (Strunk et al., 2016). In another study of 364 SIPs, common problems were identified, including similar content across schools within a district, aspects of plans that were resubmitted annually, priorities focused solely on test scores, root cause analysis unrelated to goals, and key resources unidentified (Meyers & VanGronigen, 2019). In addition, SIPs often share similar structures, contents, goals, and strategies (Meyers & VanGronigen, 2019). One may wonder: *How* were those poor or average quality SIPs agreed upon collectively among SIP team members? What went wrong in the shared decision-making processes that generated low-quality SIPs? What was the principals' role in the decision-making processes of SIPs?

Principal Leadership in the Decision-Making Processes of SIPs

School principals play a crucial role in the decision-making processes on a campus (Ah-Teck & Starr, 2014; DeMatthews, 2018; Luo, 2008; Shaked & Schechter, 2019). Principal leadership has even been described as "a general, abstract application of decision-making"

(Tarter and Hoy, 1998, p. 212). Specifically, principal leadership is shaped by (1) leaders' decisions, which are made by individual principals, and (2) organizational decisions, which are made by organizational members who are subject to the influence and authority of leaders in terms of how organizational members collect and process information for decision-making (Wang, 2021a). In SIP decision-making processes, principals decide who serves on the SIP team and the procedures of decision-making. They can also shape the conversation and decision-making process, given their power to overrule a SIP team's recommendations.

A principal should not make every single SIP decision because constraints of time, expertise, resources, and SIP requirements are too vast for one individual to comprehend. The identities and lived experiences of any principal are limited, which can constrain their ability to understand communities and school dynamics. Shifting racial student demographics is just one of many reasons principals – the majority who identify as White (78%) (National Center for Education Statistics, 2019) – need to engage in shared decision-making processes. In shared decision-making, "the leader's task shifts from making individual decisions to developing decision-making rules and procedures that ensure the group makes wise decisions by marshaling collective wisdom" (Wang, 2021a, p. 259). After all, if all SIP team members think in the same way, why bother making a shared decision when a principal can make an individual judgment call? Yet, the need to distribute decision-making power to others goes against humans' innate preference for control and autonomy (Lammers et al., 2016). To empower the SIP team to make quality decisions, principals should suppress their innate need for control, autonomy, and quick, desire-driven decisions. Thus, principals need to be aware of their individual biases and biases that can emerge in the SIP process, particularly if plans are going to be impactful and draw from a team's collective wisdom.

Biases in Decision-Making Processes

Biases are *predictable, systematic* decision-making errors (Eberhardt, 2019; Ross, 2014). Those predictable, systematic decision errors do not occur at random. Rather, decision errors often emerge in highly predictable ways that can be proactively guarded against (Kahneman, 2013). Here we introduce five biases that can undermine principal leadership in the SIP decision-making process and contribute to poorly written SIPs.

Ambiguity Aversion

Ambiguity aversion refers to people's tendency to choose an option with a known probability over an option with an unknown probability (Ellsberg, 1961). *Ambiguity* means that the probability of outcomes is unknown. When people cannot assign a numerical probability to an outcome, they tend to avoid that option. A related but different term is "risk." *Risk* means that the probability of outcomes is known. Since an objective probability in real life is rare, people make ambiguous decisions more often than risky decisions. People tend to be averse to unknown situations, even when the known probability is low and the unknown probability is high. Ambiguity aversion explains the old saying, "Better the devil you know than the devil you don't." Moreover, ambiguity aversion can be either amplified or attenuated by an expectation for decision-makers to justify their decisions as part of an accountability system. If a decision-maker is not an expert in a decision domain, ambiguity aversion is amplified because it is difficult to justify choosing an option that has unknown outcomes (Trautman & van de Kuilen, 2015). Leaders are not experts on all issues in their organizations. Out of self-preservation, they are likely to choose an option that seems easier to justify. However, if a leader has expertise in some areas, their ambiguity aversion could be attenuated because they can use other factors, such as moral values, instead of probabilities, to justify their decisions.

Confirmation Bias

Confirmation bias refers to the ways people tend to search for and interpret evidence in a way that validates their own predetermined assumptions or conclusions (Kunda, 1990). Confirmation bias not only influences where decision-makers go to collect evidence, but also how they interpret the evidence. In doing so, confirmation bias leads decision-makers to "cherry-pick" information that bends reality toward their desired directions. Confirmation bias can be explained by an underlying mental process, in which decision-makers give too much weight to information that supports their beliefs while giving too little weight to information that may challenge or contradict their beliefs. Ironically, people with stronger logical and analytical skills are more susceptible to confirmation bias because they have a superior ability to rationalize and interpret information in accordance with their preexisting beliefs (Kahan et al., 2013). Furthermore, supportive relationships and "safe spaces" can also contribute to confirmation bias, because these contextual variables can create a "comfortable bubble" where decision-makers do not encounter challenging ideas or an individual willing or able to "play the devil's advocate" in discussions (Lemay et al., 2020).

Equality Bias

Equality bias refers to people's tendency to give equal weight to each group member's preference and choose the majority vote as a group's shared decision-making—without taking into consideration their expertise. Going with the majority can be comforting to group members because it diffuses their personal responsibility if things go awry (Mannes et al., 2014). Following the group is not always a bad idea and can provide some benefits, especially to a leader. For example, when group members have shared expertise and a high level of competence, the equality bias can provide an instrumental decision-making strategy that lowers the leader's

cognitive load and reduce disharmony within the group that will likely have to implement the decision. However, equally weighting each group member's opinions can lead to problematic decisions. Individual opinions can be biased and may not warrant equal weight in the decision-making process. Moreover, researchers have found that people with low competence on a topic or subject were likely to report high levels of confidence, while people with high competence tended to underestimate their expertise (Kruger & Dunning, 1999).

Sunk Cost Bias

Sunk cost bias, also known as escalation of commitment, refers to people's tendency to persist with or further invest in a failing or inferior course of action (Sleesman et al., 2012). Decision-makers often escalate their commitments and continue to sink efforts and resources into a hopeless cause or failing strategy in the hope that things will turn around. Sunk costs influence decisions so much partly because individuals often have a hard time admitting to mistakes and have a strong desire to positively impact people around them and be viewed in a positive light (Winter, 1973). Researchers have found that decision-makers perceive threats to their professional identity as competent leaders when they make rational decisions to write off sunk costs and seek a new course of action (John et al., 2019). Thus, organizational culture can also reinforce sunk bias costs, especially if unfavorable outcomes are met with overly severe forms of accountability.

Shared Information Bias

Shared information bias refers to group members' tendency to discuss information that they all have access to while simultaneously ignoring equally important information that is only available to one or a few group members (Faulmüller et al., 2010). Shared information bias is connected to confirmation bias because in a group discussion, people tend to collaborate to

provide confirming evidence for each other's positions but often fail to explore other alternatives. Group dynamics and facilitation processes can create conditions that increase or decrease the influence of shared information bias.

Recommendations for Reducing Bias in SIP Decision-Making

To reduce the aforementioned biases, principals and their teams should recognize that biases in decision-making are inherent to school improvement efforts. A heightened awareness of the biases is the first step to overcoming them in the SIP decision-making processes. In what follows, we offer recommendations for principals and their SIP teams to reduce biases before and during the SIP decision-making processes that create the SIPs. The principal is in a pivotal position to ensure the pre-planning and SIP development process is designed in a way that reduces bias. Such efforts will require a time investment by principals, but given the importance of the SIP, such investments will pay substantive dividends in the future. Table 1 summarizes the biases and recommendations for debiasing.

<Insert Table 1 About Here>

SIP Pre-planning

Before SIP teams are assembled, principals make decisions in two areas: (1) who serves on the SIP team, and (2) procedures and rules of shared decision-making that will be used to generate SIPs. Once the team is assembled, principals are tasked with shifting from making individual decisions to ensuring the team makes high-quality decisions by following decision-making procedures and rules. To select SIP team members, principals will need to reduce confirmation bias and equality bias and can do so by using the following questions as a checklist:

1. Does the SIP team represent diverse viewpoints and expertise in school improvement? (Reduce equality bias)

2. Does each SIP team member have *demonstrated*, not self-claimed, expertise in school improvement? (Reduce equality bias)
3. What are the procedures and rules used to aggregate each SIP team member's preference to create a shared decision? (Reduce equality bias)
4. What could be potential motives that incentivize each SIP team member to serve on the team? Is each team member's self-interest aligned with the collective goal of school improvement? (Reduce confirmation bias)
5. What are procedures and rules that encourage and reward, instead of discourage or dismiss, team members who share dissenting views with the SIP team? (Reduce confirmation bias)
6. What processes will be in place to hold each SIP team member accountable for the SIPs implementation? (Reduce confirmation bias)

If the principal is unable to recruit a SIP team that includes a diversity of voices, then the principal should work with the team to identify external members in nearby schools or communities that could provide feedback and input in the SIP development process. The principal can solicit feedback from these individuals to help reduce potential biases that stem from a lack of SIP team diversity.

SIP Development

During the SIP planning and development process, principals focus on ensuring that the SIP team makes high-quality decisions. To do so, principals, as leaders of the SIP teams, are recommended to reduce all five aforementioned biases by using the following questions as a checklist:

1. Prior to each team discussion or meeting:

   a. Have I asked each team member to write down their preferences and initial decision as individuals? (Reduce confirmation bias)
   b. Have I appointed a team member to play the "devil's advocate" whose main task will be to challenge dominant views, propose opposing arguments, and provoke debate? (Reduce confirmation bias and sunk cost bias)
   c. Have I made clear to the SIP team that the discussion will continue till *all* relevant information is addressed? (Reduce shared information bias)
2. When a school improvement practice is proposed to be continued after already being implemented in the past: Have I asked the SIP team to assess the effectiveness of that practice? (Reduce sunk cost bias)
3. When a new school improvement practice is proposed:
   a. Have I asked the SIP team to evaluate the probability of that practice being effective? (Reduce ambiguity aversion)
   b. Have I asked the team to deliberate on how the accountability system could potentially influence their decision-making? (Reduce ambiguity aversion)
4. In team discussion:
   a. Have I sought out unique information from low-power and low-status members (i.e., members with less prestige, respect, and esteem)? (Reduce shared information bias)
   b. Have I made sure each team member has equal speaking time and turns? (Reduce shared information bias)

   c. If a vocal member speaks five times in a group, have I ensured that members who are less vocal have the same number of turns to speak in a meeting? (Reduce shared information bias)

5. After a unique, key piece of information is brought to the table: Have I ensured that the shared information is discussed *repeatedly* instead of being dismissed? (Reduce shared information bias)

Contingency planning

Each school is unique and so are the contextual variables that can impact a principal and SIP team's ability to implement the aforementioned recommendations. We recognize that our recommendations may be difficult to implement under certain conditions. In particular, schools may lack available staff and stakeholders or have pressing financial and time constraints. Thus, our recommendations should be viewed not as "absolutes" but as "guardrails". Guardrails are used to keep vehicles safe and on the road. Drivers can still safely navigate a road without guardrails but should use greater caution because there is less room for error. Similarly, when principals are not fully able to create a diverse team due to a lack of diverse staff or follow the decision-making process outlined above, they should slow down and be cautious because such constraints equate to the SIP team driving on a road without guardrails.

SIP teams can exercise greater caution by creating a contingency plan that helps them overcome their team's lack of time or diversity. For example, a SIP team missing an available stakeholder to represent an important set of perspectives can still identify informal members to provide feedback even if that individual cannot serve on the team throughout the entire planning process. SIP also tend to require quarterly progress monitoring, which can be opportunities to revisit decisions and team membership. SIP teams can use progress monitoring opportunities to

incorporate new voices or review prior decisions to make any necessary SIP adjustments. Regardless of the constraints, the principals' goal is to achieve cognitive diversity, defined as "perceived differences in thinking styles, knowledge, skills, values, and beliefs among individual team members" (Shin et al. 2012, 197), which is essential for quality decisions.

In the United States, districts and schools have different timelines for developing SIPs. We recommend principals take into account their state, district, and school building timelines and resources but to always start the SIP development process as early as possible. Rushing through the SIP decision-making process compromises decision quality and makes adhering to our recommended steps more difficult. Time pressure narrows decision-makers' attention breadth, creating tunnel vision (DeMatthews and Serafini 2021). Time constraints also place extra cognitive demands on decision-makers, who, in turn, are more likely to choose a strategy they have selected in the past (Ordonez and Benson 1997). Since SIP processes occur year after year, principals and SIP teams should be intentional about planning, learning from prior challenges, and incorporating their learning into their future planning processes.

Conclusion

The purpose of this article is to enhance principal practice in the SIP process by attending to the ways biases can influence the development of a high-quality SIP. The focus on heuristics and biases extends existing conceptions of SIP planning represented in many mainstream textbooks and in state and national professional standards. The biases we identified are not comprehensive, but rather serve as a starting point to help principals think about, raise questions, and spot potential blind spots that can reduce their effectiveness. We believe high-quality SIPs are essential to successful school improvement efforts, but recognize that biases can limit the efficacy of a SIP. When considering our recommendations, we hope principals think deeply about their own identities and lived experiences as well as the multiple, dynamic contextual

variables that make up their schools and communities. Principal leadership and SIP team decisions will remain limited and less likely to produce meaningful school improvement outcomes without a heightened awareness of these biases and procedural guardrails to reduce them.

References

Ah-Teck, J. C., & Starr, K. E. (2014). Total Quality Management in Mauritian education and principals' decision-making for school improvement: "Driven" or "informed" by data? *Journal of Educational Administration, 52*(6), 833-849. https://doi.org/10.1108/JEA-06-2012-0075

Bell, L. (2002). Strategic planning and school management: Full of sound and fury, signifying nothing? *Journal of Educational Administration, 40*, 407-424. https://doi.org/10.1108/09578230210440276

Bickmore, D. L., Roberts, M. M., & Gonzales, M. M. (2021). How aspiring principals applied course-based learning to develop school improvement plans. *Journal of Educational Administration*, *59*(2), 199-214. https://doi.org/10.1108/JEA-06-2020-0139

Busenitz, L. W., & Barney, J. B. (1997). Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. *Journal of Business Venturing*, *12*(1), 9-30. https://doi.org/10.1016/S0883-9026(96)00003-1

Bryk, A.S., Gomez, L., Gunrow, A. & LeMahieu, P. (2015). *Learning to improve: How America's schools can Get better at getting better.* Harvard University Press.

Crandall, D. P., Eiseman, J. W., & Louis, K. S. (1986). Strategic planning issues that bear on the success of school improvement efforts. *Educational Administration Quarterly*, *22*(3), 21-53. https://doi.org/10.1177/0013161X86022003002

Dale, S. (2015). Heuristics and biases: The science of decision-making. *Business Information Review*, *32*(2), 93-99. https://doi.org/10.1177/0266382115592536

DeMatthews, D. E. 2018. *Community engaged leadership for social justice: A critical approach in urban schools*. London, UK: Routledge

DeMatthews, D. E., and A. Serafini. 2021. Do good principals do bad things? Examining bounds of ethical behavior in the context of high-stakes accountability. *Leadership and Policy in Schools 20* (3):335–54. doi: 10.1080/15700763.2019.1668023.

Desravines, J., Aquino, J., & Fenton, B. (2016). *Breakthrough principals: A step-by-step guide to building stronger schools*. John Wiley & Sons.

Eberhardt, J. (2019). *Biased: Uncovering the hidden prejudice that shapes what we see, think, and do.* Viking.

Edmonds, R. (1982). Programs of school improvement: An overview. *Educational Leadership, 40*(62), 4-11.

Ellsberg, D. (1961). Risk, ambiguity, and the savage axioms. *The Quarterly Journal of Economics, 75*(4),643-669. https://doi.org/10.2307/1884324

Faulmüller, N., Kerschreiter, R., Mojzisch, A., & Schulz-Hardt, S. (2010). Beyond group-level explanations for the failure of groups to solve hidden profiles: The individual preference effect revisited. *Group Processes and Intergroup Relations, 13*(5), 653–671. https://doi.org/10.1177/1368430210369143

Fernandez, K. E. (2011). Evaluating school improvement plans and their affect on academic performance. *Educational Policy*, *25*(2), 338-367. https://doi.org/10.1177/0895904809351693

John, L. K., Jeong, M., Gino, F., & Huang, L. (2019). The self-presentational consequences of upholding one's stance in spite of the evidence. *Organizational Behavior and Human Decision Processes, 154*, 1-14. https://doi.org/10.1016/j.obhdp.2019.07.001

Kahan, D. M., Peters, E., Dawson, E., & Slovic, P. (2013). Motivated numeracy and enlightened self-government. *Behavioural Public Policy, 1*, 54-86. https://doi.org/10.1017/bpp.2016.2

Kahneman, D. (2013). *Thinking, fast and slow*. Farrar, Straus and Giroux.

Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: how difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology, 77*(6), 1121-1134. https://doi.org/10.1037/0022-3514.77.6.1121

Kruse, S. D. (2001). Creating communities of reform: Continuous improvement planning teams. *Journal of Educational Administration*, *39*(4), 359-383. https://doi.org/10.1108/EUM0000000005496

Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin, 108*(3), 480–498. https://doi.org/10.1037/0033-2909.108.3.480

Lammers, J., Stoker, J. I., Rink, F., & Galinsky, A. D. (2016). To have control over or to be free from others? The desire for power reflects a need for autonomy. *Personality and Social Psychology Bulletin*, *42*(4), 498-512. https://doi.org/10.1177/0146167216634064

Lemay Jr, E. P., Ryan, J. E., Fehr, R., & Gelfand, M. J. (2020). Validation of negativity: Drawbacks of interpersonal responsiveness during conflicts with outsiders. *Journal of Personality and Social Psychology, 119*(1), 104-135. https://doi.org/10.1037/pspi0000214

Lezotte, L. W., & Bancroft, B. A. (1985). School improvement based on effective schools research: A promising approach for economically disadvantaged and minority students. *The Journal of Negro Education, 54*(3), 301-312. https://doi.org/10.2307/2295066

Luo, M. (2008). Structural equation modeling for high school principal'' data-driven decision

making: An analysis of information use environments. *Educational Administration Quarterly, 44*(5), 603-634. https://doi.org/10.1177/0013161X08321506

Mackenzie, D. E. (1983). Research for school improvement: An appraisal of some recent trends. *Educational Researcher, 12*(4), 5-17. https://doi.org/10.3102/0013189X012004005

Mannes, A. E., Soll, J. B., & Larrick, R. P. (2014). The wisdom of select crowds. *Journal of Personality and Social Psychology, 107*(2), 276-299. https://doi.org/10.1037/a0036677

Meyers, C. V., & VanGronigen, B. A. (2019). A lack of authentic school improvement plan development: Evidence of principal satisficing behavior. *Journal of Educational Administration, 57*(3), 261-278. https://doi.org/10.1108/JEA-09-2018-0154

National Center for Education Statistics. (2019). *Characteristics of public and private elementary and secondary school principals in the United States: Results from the 2017-18 national teacher and principal survey.* US Department of Education. Retrieved from https://nces.ed.gov/surveys/ntps/summary/2019141.asp

Ordonez, L., & Benson III, L. (1997). Decisions under time pressure: How time constraint affects risky decision making. *Organizational Behavior and Human Decision Processes*, *71*(2), 121-140.

Ross, H. (2014). *Everyday bias: Identifying and navigating unconscious judgments in our daily lives.* Rowman and Littlefield.

Shaked, H., & Schechter, C. (2019). Exploring systems thinking in school principals 'decision-making. *International Journal of Leadership in Education*, *22*(5), 573-596.

Shin S., Kim T., Lee J., Bian L. (2012). Cognitive team diversity and individual team member creativity: A cross-level interaction. *Academy of Management Journal, 55*, 197-212.

Simon, H. (2013). *Administrative Behavior: A study of decision-making processes in administrative organisations*. The Free Press.

Sleesman, D. J. (2019). Pushing through the tension while stuck in the mud: Paradox mindset and escalation of commitment. *Organizational Behavior and Human Decision Processes*, *155*, 83-96.

Strunk, K. O., Marsh, J. A., Bush-Mecenas, S. C., & Duque, M. R. (2016). The best laid plans: An examination of school plan quality and implementation in a school improvement initiative. *Educational Administration Quarterly*, *52*(2), 259-309.

Tarter, C. J., & Hoy, W. K. (1998). Toward a contingency theory of decision making. *Journal of Educational Administration*, 36(3), 212-228.

Trautmann, S. T., & van de Kuilen, G. (2015). Ambiguity attitudes. *The Wiley Blackwell Handbook of Judgment and Decision Making, 1*, 89-116.

White, T., & Noble, A. (2020). Rethinking "Innovation Schools": Strengths and limitations of autonomy-based school improvement plans in contexts of widening racial inequality. *National Education Policy Center*.

Wang, Y. (2021a). Artificial intelligence in educational leadership: A symbiotic role of human-artificial intelligence decision-making. *Journal of Educational Administration, 59*(3), 256-270.

Wang, Y. (2021b). *Something went wrong: 52 biases that undermine your leadership decision making*. Decisions Better Press.

Winter, D. G. (1973). *The power motive*. The Free Press.

Table 1. Five Common Biases that Undermine School Improvement Planning

Biases	Definitions	Questions as guardrails to reduce biases
Ambiguity aversion	People tend to choose an option with a known probability over an option with an unknown probability.	• When a new school improvement practice is proposed, have I asked the SIP team to evaluate the probability of that practice to be effective? • Have I ask the team to deliberate on how the accountability system could potentially influence their decision-making?
Confirmation bias	People tend to search for and interpret evidence in a way that validates their own predetermined assumptions or conclusions.	• What could be potential motives that incentive each SIP team member to serve on the team? • Is each team member's self-interest aligned with the collective goal of school improvement? • What are procedures and rules that encourage and reward, instead of discouraging or dismissing, team members who share dissenting views with the SIP team? • How to hold each SIP team member accountable for the SIPs? • Prior to each team discussion or meeting, have I asked each team member to write down their preferences and initial decision as individuals? • Prior to each team discussion or meeting, have I appointed a team member to play the devil's advocate whose main task will be to challenge dominant views, propose opposing arguments, and provoke debate?
Equality bias	People tend to assign equal weight to each group member's opinion and prefer to select the choice that has the majority vote.	• Does the SIP team represent diverse viewpoints and expertise in school improvement? • Does each SIP team member have *demonstrated*, not self-claimed, expertise in school improvement? • What are procedures and rules used to aggregate each SIP team member's preference to create a shared decision?
Sunk Cost bias	People tend to persist with or further invest in a failing or inferior course of action.	• Prior to each team discussion or meeting, have I appointed a team member to play a devil's advocate whose main task

		will be to challenge dominant views, propose opposing arguments, and provoke debate? • When a school improvement practice is proposed to be continued after already being implemented in the past, have I asked the SIP team to assess the effectiveness of that practice?
Shared Information bias	Group members tend to discuss information that they all have access to while simultaneously ignoring equally important information that is only available to one or a few group members.	• Prior to each team discussion or meeting, have I made clear to the SIP team that the discussion will continue till *all* relevant information is addressed? • In team discussion, have I sought out unique information from low-power and low-status members (i.e., members with less prestige, respect, and esteem)? • In team discussion, have I made sure each team member has equal speaking time and turns? If a vocal member speaks five times in a group, have I ensured that members who are less vocal have the same number of turns to speak in a meeting? • After a unique, key piece of information is brought to the table, have I ensured that the shared information is discussed *repeatedly* instead of being dismissed?