
Design-Based School Improvement

A Practical Guide for
Education Leaders

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3

Making Intuitive Theories of Action Explicit

with Elizabeth Zumpe

A theory of action is a prediction of how to address a problem of practice. For example, “My plants are not growing; what do I need to do to make them grow?” We can think of the theory of action as an if-then statement: “If I water the plant every other day and put it in the sun, it will grow.” But wrapped inside that if-then prediction is an assumption about what’s causing the problem. The prediction about the plant may turn out to be incorrect if it is an arid-climate plant that needs little water or a shade-loving plant that prefers less sun. If we know nothing about plants, we have no idea about what to do. We have no intuition. When we go to the store, we read the plant’s label: this is a shade-loving plant that needs water once a week. Without this information, we would be lost. But most of us are not that clueless about things we do in everyday life and on the job.

Everyone walks around with intuitive theories of action through which a person makes causal connections between behaviors and outcomes. Most often, these causal connections are made tacitly; that is, people are barely conscious of doing so. For example, when people enter a public space, they try to look friendly and agreeable. Why? Well, they just do. But on second thought, they know that an angry face makes others uncomfortable, while a friendly face will not. People

do not have to know about mirror neurons to explain this observation; they just know, intuitively, that one person's face has the power to trigger an emotional reaction in someone else. They know it is something about the connection between visual cues and emotional reactions—that is their *intuitive theory of action*. And this intuitive theory is implicit. Later in the book, we will show how an intuitive theory of action gradually shifts to an analytical one.

In this chapter, we mainly do two things. We contrast the concepts of intuition and heuristics with the concepts of rationality and analytics, and we show what role intuitive theories of action may play in educational leaders' intuitive problem solving. We address the following questions:

- What is intuition?
- What role does it play in people's understanding of the world?
- How is intuition different from a systematic analysis of problems?
- How do people make intuitive connections between what causes a problem and what changes it?
- What is an intuitive theory of action?

HEURISTICS AND INTUITION

Most people have pretty good intuition about their work; otherwise, they would not have had the success that has come their way. People experience repetitive cause-and-effect relationships in their work. They have experienced what works and what does not. When people see a behavior that poses a problem, they just know by association what might work as a remedy. They associate a pattern of behavior that they perceive as problematic with a set of actions that they ought to take. These kinds of shorthand decision rules, called *heuristics*, are necessary for quick decisions.

For example, a common heuristic that seems to come naturally to educational leaders is the so-called PD heuristic, or the professional development heuristic. When educators apply the PD heuristic, they name a problematic practice by describing what is *not* there and then assume that a workshop matched to that

absence will provide the remedy: “When in doubt, PD.” With the PD heuristic, educators tacitly entertain an intuitive theory of action without explicitly stating it: “What we lack is new information and training.” And this intuitive theory is often, indeed, correct, but not as often as people think. That is because with the PD heuristic, educators treat the learner as an empty vessel that they need to fill with their own professional development.

Teachers who have a superficial understanding of student learning use the empty-vessel intuition as well. They cover new content without being clear about the students’ preexisting understanding, ways of thinking, and misconceptions that need elaboration, refinement, or challenge before deep learning can happen. For example, students who have never heard of the industrial revolution do not, of course, know anything about it. But they may have preexisting notions of industry, revolution, and the role of technology and science in economic development. And filling students with the new concept will do little if the teacher does not, in the process, recognize that in all likelihood, all the revolutions the students had looked at previously were political revolutions, most notably the American Revolution.

Learners, student or adult, are not empty vessels. If a teacher intuitively believes that the problem is that students do not know anything about the industrial revolution or that they “need to learn” about the industrial revolution (since they presumably do not know anything about it), he or she treats students as empty vessels. If we approach a problem this way, our problem is the absence of our solution. The teacher’s solution, in this case, is covering the industrial revolution.

When educational leaders treat adults as empty vessels, the leaders may fall into the same trap faced by a teacher introducing the industrial revolution. Confronted with achievement data that show English language learners lagging behind native speakers, they may have identified a consultant that has a specific set of engagement strategies for English language learners on offer. After covering the strategies in a professional development session, the leaders expect the teachers to know and apply these strategies. When the leaders afterward make their rounds through the classrooms to check, they find that the strategies are not used widely. The problem has now morphed into the failure of teachers to adopt the leader’s

solution, and the remedy for that is often “more PD.” In the leaders’ shorthand thinking about the problem, adults learning new things on the basis of what they already know and practice is left out of the picture.

If a teacher thinks that students in all likelihood know that revolutions are about sudden shifts in political power between those in control and those who want more freedom and self-determination, he or she can state the problem differently: students already understand revolutions as political revolutions (e.g., the American Revolution, which freed the colonists from British control). The teacher now needs to extend this understanding to the understanding that technology and economics can create revolutions as well. Below, when we describe Michelle’s intuitive theory of action, we give a concrete example of a leader thinking shorthand, and in her intuitive shorthand thinking, she treats her teachers as empty vessels that need culturally relevant pedagogy.

The daily flow of work rarely allows practitioners to address problems in their full complexity. In most situations, leaders only have time and energy for the kind of problem solving that is done quickly, using shortcuts: “Strategy X has always worked for me when I have encountered situation Y, so let’s do X.” Or when under pressure, a leader might think, “People whom I trust tell me that Strategy X or Program Y has promise or has been shown to work, so let’s try it.” But these intuitive ideas are often not the best ones for making important strategic decisions about new directions, new programs, new organizational structures, or new professional development initiatives. This is because intuition, and the associated heuristics, can often be misleading.

EXCURSION INTO THEORY

Decision Making, Rational and Intuitive

The standard decision making model assumes that humans base their decisions on choice. They base their choices on their preferences, their knowledge of alternatives for action, their knowledge of the consequences of their actions, and a rational assessment of what maximizes desired outcomes.¹

Bounded Rationality

Decisions are thus a matter of rational choice. Yet even if they have the intention or desire to do so, people do not make decisions that are “wholly rational.”² Complete rationality would require that people be able to consider an infinite number of alternatives and have a perfectly complete and accurate understanding of the situation at hand. Both of these requirements are impossible, given the limits of information processing capacity and human cognition.³ Thus, even when people try to make a rational decision, they actually act with what Herbert Simon calls “bounded rationality”—people do the best they can to make what seems to be the best decision with the information at hand in a given situation.⁴

The idea of limited information processing capacity that underlies the concept of bounded rationality is reformulated in dual-process models.⁵ In these models, fast, relatively spontaneous, and effortless processing of information is contrasted with slow, rule-bound, and effortful deliberations, the former relying on intuition, the latter on rationality. Intuition produces understanding that can only be backed up with fuzzy empirical verification and associative justifications. Rationality applies sequential logic, measurement, and analysis. Intuitive reasoning gives “first answers” to choices or problems, while rational reasoning may follow up with verifications. Most everyday decisions are made quickly. Short time spans do not allow actors to think long term through possible alternatives to actions and their consequences. Intuition is called for.

Intuition

There is a cognitive and expressive-emotional side to intuition.⁶ Cognitively, intuitive judgment relies on heuristics. Heuristics are rules of thumb that abbreviate the decision-making process. These quick-and-dirty approximations enable individuals to lump problems into manageable pieces.⁷ Heuristics operate with categories, rules, or whole patterns, for example, “Disadvantaged students bring to schools social adversities that cause discipline problems that require vigilant classroom management” or “White teachers over-refer black students to special education because of a racial dynamic that needs to be disrupted with information, awareness of moral wrongdoing, and sanctions.”⁸ A heuristic might arise from practices that have repeatedly worked in the past. Patterns from previous experiences are matched with analogous present situations. For instance, past years’ budget allocations may guide decisions about the current year.⁹ Heuristics are an integral part of human thinking, and the myriad decisions people are

asked to make cannot be carried out without heuristics that economize human cognitive capacity.

Heuristics, however, are associated with a number of biases. These biases create misperceptions that can lead to erroneous decisions.¹⁰ Heuristics sway decision makers to judge the likelihood of an outcome with systematic cognitive bias. A few examples: when people stereotype another person, they simplify their thinking, believing that the individual who is a member of a particular group will most likely behave according to the general characteristics associated with this group. Or when people assert that they have "always done it this way," they associate the uniqueness of a given situation to a well-rehearsed pattern. Accessibility of information is key in decision making and problem solving. What is fresh in our minds will more readily be seen as relevant for a specific decision or problem than will distant memory. In applying these types of heuristics, decision makers judge the likelihood of an outcome not according to careful analysis of the situation, but according to "the ease with which the mental operation of retrieval, construction, or association can be carried out."¹¹ In this case, decision makers are likely to rely on experiences that are more easily brought to mind—a tendency that biases them to emphasize analogies and neglect the possibility of outcomes less frequently encountered in the past.¹² Decision makers swiftly take a perceived symptom of a present problem (e.g., teachers fail to attend meetings for the common planning of curriculum) and infer that it represents a pattern (e.g., teachers avoid scrutiny; they need to deprivatize). This pattern becomes associated with a set of conventional strategies that worked in the past (admonition and monitoring) or are currently being sold by solution advocates (developing professional learning communities).

Notwithstanding the cognitive biases of heuristics, Stephen and Patricia Davis point to a side of intuition that emphasizes emotional-expressive qualities.¹³ These qualities, they believe, are especially useful when situations call for novelty, flux, and creativity. Intuition, being subconscious, may create sudden clarity that eludes actors who engage in more systematic means-ends analyses. Intuition "is knowledge constructed whole-cloth in a sudden shift from the subconscious to conscious awareness."¹⁴ As such, intuition can be experienced as a "sudden flash of insight" that is "accompanied by an emotional feeling such as certitude, excitement or fear."¹⁵ Intuition presents actors with "judgments or choices before consciously considering them."¹⁶ Intuitive thinking is essential when people need to respond to situations for which they have no existing frames of reference. When leaders are challenged to go beyond conventional strategies

and develop novel approaches, intuitive thinking is at a premium. But as with heuristics, actors can go wrong with intuition of the more expressive kind, as strong emotions in a decision situation can distort people's view of reality, and thoughts from the subconscious mind may merely represent wishful thinking.¹⁷

Thus, for good decision making in complex organizations, both rational analysis and intuition have their place. A desirable path would use both: *think fast* to gain the benefit of insight from intuition and heuristics, and *think slow* to check for bias and error and guard against the tried-and-true, but untested, conventions that uphold the status quo.¹⁸

When decision makers tackle problems in the practical world, intuition is the first, and most precious, source of insight. Intuition bounds people's thinking, structures and simplifies the complexity of their undertaking, generates their aims, and makes connections between causes and effects. Most often, as we have shown, intuition guides people in tacit ways within the rapid pace of the workday. But some situations can be puzzling. They make us stop and think. We marshal our practical knowledge base, experiences, the things we learned in professional settings, and our current insights and think hard about the problem and its solutions. We make our intuitive theories of action explicit: we frame and define the problem and the behaviors that indicate the problem to us, and we imagine a desired state to be attained; we try to better understand the problem's symptoms and its causes. And we try to figure out how to change people through a deliberate process that we believe will produce the desired state, which is often rather fuzzy and aspirational to begin with.

CHRISTINE'S INTUITIVE THEORY OF ACTION

We showed how Christine and her task force have come to frame and define their problem with discipline in their district's middle schools as an individual *and* organizational problem. From an individual perspective, the cause of the problem seems clear. First- and second-year teachers, it is almost an axiom, have a lot to learn about classroom management. So as a solution, a few classroom management

professional development workshops surely cannot hurt. Then there is the organizational aspect of the problem. This is trickier. The team brainstorms a whole slew of ideas and ends up settling on three of them. Administrators, the team believes, have to be more vigilant about rules and their enforcement; there needs to be more emotional support for students who repeatedly break the rules; and there need to be instructional assignments for all the students who are sent out of class so that they will not fall further behind. Individual workshops, schoolwide rules, and support for students make intuitive sense to the team, and these measures would presumably go some distance in addressing the problem. The team's intuitive theory of action follows a specific logic. They look at what the teachers, administrators, counselors, and detention supervisors can do as one next incremental step that may improve the situation. The team, in effect, triages the problem by formulating for the district an action plan that lists these strategies.

MICHELLE'S INTUITIVE THEORY OF ACTION

Michelle has framed her problem of practice as the need for teachers to embrace culturally relevant pedagogy. In her theory of action, she intuitively connects the broad problem of the achievement gap and the racial makeup of her students and teachers with what she is convinced is a best practice for this situation. Michelle is surprised when teachers in her school are cool to the equity committee's initiative. She senses reluctance when her enthusiastic presentation of the new project is met with cautious reserve. She begins to suspect that the teachers' reluctance may be evidence of their deficit thinking and cultural insensitivity. In the district equity committee, she defines her problem as "teachers resist CRP" and her solution as "overcoming teachers' resistance to CRP." In other words, in her intuitive theory of action, Michelle *defines the problem as the absence of her solution*. Rather than naming an existing practice that was problematic and that needed elaboration, refinement, or challenge, she named a desired practice that was absent.

The problem with this kind of thinking about change as filling an empty vessel is that soon, the leaders are surrounded by "resisters." Adults, even more than children, do not learn things for which they cannot see the purpose. To see the

purpose, they need to connect the leader's desired change—what the leader sees as an absence—to what already exists in their thinking and practice, and they need to generate the motivation to do something about it. Pointing out to adults that their problem is that they ought to do what somebody else has identified as their need is not a powerful motivation theory.

A different way of seeing the problem emerges when Michelle discusses it with her assistant principal, Grace. Grace has been the actual nuts-and-bolts instructional leader at the school. Grace cuts to the chase: "You can't expect teachers to have courageous conversations and engage in deep interpretation of culturally relevant texts when you ask them to follow a skill-based prescriptive program with fidelity and when you pressure them on results from weekly quizzes and quarterly benchmarks. You can't expect teachers to suddenly think outside the box when the district has discouraged that for years." Michelle is stunned: the assistant principal is telling her that, far from bringing the solution, Michelle is part of the problem. She swallows, but she does hear what Grace has to say. For the moment, Michelle decides to suspend her fervent belief in the CRP solution and to reassess the situation by gathering more information about what the teachers in her school are actually doing that is problematic.

Michelle is puzzled. She feels that she must shift her perspective. But what is she missing in her thinking? She settles on observing her teachers' practices and better understanding the causes of why they act the way they do.

ERIC'S INTUITIVE THEORY OF ACTION

Eric's problem of practice revolves around instructional supervision. We showed earlier that his problem definition shifted as he located the causes for the problematic practices first in the principals' failure to prioritize classroom visits and then in the principals' lack of competence. When he thought about the needed changes or why his imagined changes would do the job (i.e., his understanding of the change process), he intuitively drew from his varied experiences. And one powerful experience in his teacher education program stuck out. He remembered watching videos and using an observation tool with which he and his fellow

students analyzed instructional sequences, followed by discussions about their observations.

Eric's intuition tells him that the cause of his problem is that principals have a hard time analyzing lessons and giving feedback. He intuits a solution: "If I review videos and use an observation tool with the principals, then they will learn how to become better instructional supervisors." Note that when Eric thinks about the changes he needs and his intuitive understanding of the change, he thinks in shorthand. He thinks of tools, materials, and activities as the things that drive his outcomes. There is nothing wrong with that, as this is how most people think when they intuitively consider teaching somebody something new. People think of what *they* must do to make another person learn and change, but they often think only fleetingly about what should go on inside the target person's mind. Instead of learning *by* doing, people use the heuristic that learning *is* doing. Of course, activities can help people learn, but what exactly are they supposed to learn while engaging in the activity?

Following this intuitive theory of action, Eric's intervention is to bring the principals together five times for a workshop. During the workshops, he plans to expose the principals to videos of classroom instruction that will be analyzed with an observation tool that he borrowed from an evaluation program currently touted as effective by his district. Halfway into the intervention, Eric notices that what he has designed is not working. Sure enough, the principals watch the videos with the observation tool in hand, and while watching, they check off whether the teacher stated the lesson objective, had good time on task, used a variety of strategies to ensure equitable participation, and so forth. But Eric is dissatisfied. The observation tallies just do not add up to what Eric now realizes is most important to him: students' academic engagement with the content. His problem definition has shifted yet one more time.

Eric now realizes the limitations of his intuitive theory of action: his framing of the problem was fuzzy. He started with "they don't observe," then moved to "they don't want to observe," and finally to "they don't know how to analyze lessons." Now he realizes that this framing of the problem was still too vague. He ends up with "they don't know how to recognize students' engagement with ideas."

As the frames around his problem of practice change, different behaviors that Eric considers problematic come into view. With this changed view, his learning goals for the adults, or the desired end states, shift as well. He realizes he needs a precise definition of the beliefs, attitudes, or practices he wants to change and a precise definition of where he wants to end up.

He wonders what was missing from his (intuitive) understanding of the change process that prevented him from predicting the limited effect his intervention had. After all, he chose activities that had worked for him. He asks himself what it was about those activities that had been so effective for him. In thinking about this, he realizes he has left something out of the picture: what kind of learning was supposed to take place during these activities? For the principals, the task seemed clear: they were to note and rate the occurrence of discrete teaching behaviors. But this is not what Eric wanted. He wanted them to analyze lessons more deeply.

In his intuitive theory, the key drivers of the principals' learning were the observation tool, the videos, and the space for professional conversations. Eric pulled the car out of the garage and drove it, but he was not clear on what the passengers were supposed to see while they were riding. His passengers donned their administrator hats and saw only objects that needed to be checked off. He, however, wanted them to see a dynamic interactive system between teachers and students around instructional material. What kind of learning will now have to take place to shift that perspective? Eric realizes that his understanding of the change process lacks a good grasp of what kind of adult learning will need to take place, which is at the core of change.

NORA'S INTUITIVE THEORY OF ACTION

For Nora and her school leadership team, framing and defining the problem came relatively easy. They worked in a school in which social justice was taken as an explicit guide for action. They had focused on bullying behavior among students, and they were now going to tackle homophobic and racial slurs in their school by addressing adult behavior. They formulated as their desired state that adults will intervene when they hear slurs in the building.

But now Nora is faced with a huge challenge. She is a capable administrator and she has firm moral commitments, but she does not know what to do. She knows intuitively that addressing slurs is slippery territory, and she is, yes, scared. For a moment, she considers contracting the services of an acclaimed reform organization that has as its specialty “re-culturing schools for equity.” But in the end, she and her leadership team decide that they want something homegrown, designed by themselves, and with the potential to deeply influence their school’s culture the way they see it. They do not think that implementing an externally developed package will do this, but they are nevertheless going to draw from the wisdom of this reform organization.

In a brainstorming session, the team sketches its intuitive theory of action. The team members begin by trying to understand what explains their problem. They think about what they know about slurs, both personally and professionally, and what they have witnessed in terms of slurs at the school. They settle on the following intuitive understanding of their problem: “Slurs have the potential to hurt because they put people to whom slurs are directed into an inferior position. Slurs are an expression of something bigger than the school. They reflect the value judgments we make about certain groups in society.” The team also senses that because slurs are so common and ingrained in the everyday culture of schools, people are not even aware of what is going on even though they probably all feel that they are committed to social justice.

What to do about it? The team members settle on awareness, commitment to social justice, and intervention strategies as the building blocks of their intuitive understanding of the change process. Their theory of action is as follows: If they create adult awareness of the pervasiveness of slurs in their school, reaffirm that the school, as a social justice school, cannot tolerate the problem, and develop ways to approach students when they use slurs, then adults will feel inclined to step in and take action.

As adults regularly take action, the culture of the school may shift. But Nora worries. Will the social justice theme of the school be powerful enough to get her faculty through the dangerous territory of racism and homophobia?

CHAPTER SUMMARY

In this chapter, we explained how a theory of action begins—intuitively. We discussed the following points:

- Intuition produces understanding that can only be backed up with fuzzy empirical observation and associative justifications. Rationality applies sequential logic, measurement, and analysis.
- When leaders are challenged to go beyond conventional strategies and develop novel approaches, intuitive thinking is at a premium.
- When using intuition, people rely on heuristics, that is, rules of thumb that connect present patterns of behavior to prior experience and knowledge.
- An intuitive theory of action combines, in a fuzzy, creative way, what a person knows or understands about both a problem's causes and the drivers that move the change process forward and that may improve on the problem.
- Most often, problem solvers develop their intuitive theories of action implicitly and semiconsciously. People awaken their intuitive capacities and problem-solving skills by making their intuitive theories of action explicit.