Australian Institute for Teaching and School Leadership Limited

Enabling leadership using knowledge and skills in Standard 2

Elaborations and scenarios to guide your development of:

Focus Area: Solving complex problems within the Australian Professional Standards for Middle Leaders

Acknowledgement of Country

The Australian Institute for Teaching and School Leadership (AITSL) acknowledges the Traditional Custodians of the lands, sea countries, and waterways from across Australia. We pay our respect to Aboriginal and Torres Strait Islander histories and living cultures; and to Elders past and present.

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Focus Area: Solving complex problems

Definition in the *Australian Professional Standards for Middle Leaders*

The ability to lead the analysis and resolution of complex problems related directly to teaching and learning and work through problems collaboratively, systematically and iteratively.

Elaboration of the definition

Since some middle leaders avoid using the language of problems and problem solving because they think it is negative, it is important to clarify how the word is used in the Australian Professional Standards for Middle Leaders (Middle Leader Standards). A problem is a gap between the current situation and what is desired, plus the demand that the gap be closed. The demand to close the gap is included in the definition because there are hundreds of gaps in any school, and if there is no demand to close them, then those gaps do not constitute problems. They are just lived with until a leader comes along who creates the demand.

The distinction between more complex and less complex problems is important because only the former require the complex problem solving capability described here. Complex problems are those which cannot be solved by current routines. They are complex because there is uncertainty about the path to a solution, and about what a good solution looks like (Dorner& Funke, 2017). When quick fixes have not worked and problems persist, leaders need to interrupt fast intuitive problem solving and switch to a more deliberative mode.

Complex problems are solved by progressing through a sequence of problem identification, evidence-based analysis of causes, formulation of solution strategies that are tightly linked to causes and to intended outcomes, followed by solution implementation and evaluation. While there are many variations of this rational model, and an emphasis on iterating between and within the stages, it prescribes reduction of uncertainty through careful processing of information and strong alignment between validated causes and proposed solutions.

The model of complex problem-solving included in the Middle Leader Standards is called collaborative complex problem-solving (CCPS). It integrates a five-stage problem-solving sequence with a collaborative process for gaining agreement with relevant colleagues at each stage (Patuawa, Robinson, Sinnema, & Zhu 2021; Robinson, 2023). Since middle leaders can seldom solve problems on their own, the collaborative strand is as important as the five-stage sequence. This collaboration should not, however, prevent a leader from engaging in part or all of this process on their own when appropriate. The five stages are:

1. **Identifying the Problem**. The purpose of this stage is to identify a gap between the current and desired goal state, explain why closing the gap is a priority, and test whether there is sufficient agreement to do so. Completion of this stage does not require agreement about the nature or causes of the problem – that is for Stage 2. It only requires agreement that there is an important gap between the actual and desired situation and that an attempt to close the gap should be made.
2. **Inquiring into Causes**. The purpose of this stage is to generate and test causal hypotheses through a planned inquiry process before suggesting or selecting solution

strategies. This stage is critical when previous routine problem-solving efforts have not solved the problem. The focus should be on possible causes that the school can control. Careful inquiry into causes may reveal that prior attempts to solve the problem failed because they were based on incorrect beliefs about the causes of the problem.

3. **Formulating Solution Requirements**. The purpose of this stage is to establish what will count as a solution *before* suggesting any actual solution strategies. Solution requirements help us to solve a problem because they rule in those solution strategies that satisfy the requirements and rule out those that do not meet them to a sufficient extent. If causal inquiry has shown that the comprehension results are weak because students are not being taught relevant background knowledge and vocabulary, then a key solution requirement is a reading strategy that has an explicit focus on building relevant background knowledge and vocabulary. This requirement helps the leader decide what reading interventions are likely to be more effective than others. Complex problems usually have multiple solution requirements and there is often considerable tension between them. If people can agree on the set of requirements before suggesting solution strategies, then everyone can understand the complexity of the whole problem and take responsibility for solving it by crafting a solution which best satisfies all the requirements. When the solution requirements are clear and detailed the solutions become much more obvious.
4. **Implementing and Monitoring Solution Strategies**. Solution strategies are implemented through a progressively revised action plan. A key reason why school improvement attempts fail is inconsistent implementation. Leaders need to find out how well teachers are implementing new strategies by collaboratively developing indicators of what good practice looks like and using them as the focus of their observations and discussions.
5. **Evaluating Outcomes** While implementation indicators provide feedback about how leaders and teachers are implementing solution strategies, outcome indicators provide evidence about the impact of those strategies on student outcomes. If a thorough analysis of the priority problem has been done at the stage of problem identification, then these data will serve as a baseline measure against which leaders can monitor progress in closing the gap. Short-term and long-term outcome indicators should be set so that leaders can tell, well before the end of the term or year, if progress is being made.

Progress is not always linear through the five stages. For example, if leaders discover in Stage 2 (Inquiring into Causes) that the problem they need to resolve is different from the one identified in Stage 1, they should return to Stage 1 and revise their problem statement. Since complex problems are seldom solved at the first attempt, iterations of one or more stages are likely.

Why is skill in complex problem solving important?

A coherent approach to improvement requires a shared theory of problem solving – shared by teachers, leaders, and support personnel, and embedded in the policies and procedures that guide their work. The deliberative theory of problem-solving outlined here is appropriate when the “going gets tough”, that is, when problems are complex and have persisted despite prior attempts to resolve them.

For some leadership researchers, capability in complex problem-solving is key to leadership effectiveness, for leaders cannot achieve their improvement goals if they cannot solve the problems that stand in the way of success (Mumford et al., 2017). 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 example, resources may be wasted, and students’ learning stymied because school leaders introduce new programs and innovations without a careful prior diagnosis of the learning needs of the target students. Whether

such “quick fixes” are a response to external political pressure (Bryk, Gomez, Grunow, & Le Mahieu, 2015) or to school leaders’ own drive for improvement, this pattern of problem-solving often brings costs in teacher burnout and cynicism without the intended benefit of improved learning and teaching. Given that so much is at stake, there is a moral and professional obligation on leaders to be diligent about how problems are identified, understood, and resolved.

Scenarios illustrating increasing capability in complex problem-solving

Scenario: Renewed attendance improvement

Since Covid, attendance at Bullaroo School had plummeted, especially at Years 7-9. For two years now, there had been little improvement, despite a new emphasis on phone calls to parents and more consistent tracking of attendance data. All that these efforts had achieved was a stronger conviction on the part of some teachers that nothing would change until the community changed its attitudes to schooling. Now the school was under pressure to try again by using targeted state funding and newly developed resources on how to improve attendance. The principal asked Caitlin, team leader for the senior school, to lead a renewed effort.

Proficient

Caitlin knew enough about complex problem-solving to recognise that she had to stop the search for another quick fix. The last thing the school needed was another failed piecemeal initiative. Instead, she had to ensure that her team agreed that senior school attendance was a priority problem and that they would work with her to rigorously inquire into its causes, before coming up with any solution strategies. With her principal's support, she led a team meeting in which she explained why they needed another go and how their problem-solving efforts would be more rigorous and systematic than before. She was somewhat taken aback, however, with the push back she got from two of her teachers who remained convinced that they had done everything possible and that they should focus on the children who did turn up. She knew that she had reacted to the pushback by giving compliance reasons – “the principal has asked me to lead this as it is a key goal in our strategic plan” – but hadn’t known how else to respond.

Accomplished

Caitlin prepared for the next meeting by analysing the attendance data in more detail to identify patterns about who was away, when, and from which classes. Crucially, she compared the attendance with those of two similar schools in her network and found that attendance at Bullaroo school was considerably lower. She would present that data to her team and explain that the comparison with similar schools gave her hope that it was possible to lift attendance. She was curious, she added, to learn what the comparison schools were doing that might be helpful to solving the problem at Bullaroo. The comparison was powerful in motivating the team to learn and try again. This time however there would be a rigorous process of finding the causes of the problem before coming up with any solution strategies.

Caitlin listened carefully to the team’s hunches about the causes of the absence problem. The whiteboard list covered everything from parental attitudes, lack of money for transport, bedtime routines, peer pressure to truant, playground bullying to the timeliness of follow-up phone calls. Caitlin pointed out, without blaming her teachers, that there was nothing on the list about teacher-student relationships and the classroom engagement of students. She wanted all the possibilities on the table – not just those that were easy to talk about.

Expert

The process of testing the team’s beliefs about causes had proved fascinating. People were amazed to find that their taken-for-granted assumptions about, for example, some parents not having money

for petrol or buses, were wrong. The causes of the absence problem were largely related to inconsistent attendance management procedures, concerns about safety and bullying, and students' lack of success in class, which eroded their motivation and their relationship with their teachers.

Since addressing many of these issues required a school-wide approach, Caitlin went back to her principal to explain the team's progress and why they now needed to involve all the staff. The principal agreed and invited her to talk with the staff about how she had used the first two stages of the collaborative complex problem-solving model to investigate the absence problem. She outlined the next three stages of problem solving and modelled how to move from validated causes to solution requirements and solution strategies. Some of those strategies, e.g. more engaging lessons and catch-up tutorials for students with high absence, were her responsibility. Others, such as improved attendance management routines were the responsibility of others. While considerable progress had been made, Caitlin knew that without consistent and persistent monitoring of the implementation of the solution strategies, the school would not learn about whether it was on track to meet the new attendance targets.

Discussion Starters

1. What is the track record of achieving improvement goals in your school? How do you explain that?
2. Do you recognise the quick fix strategy? When have you used it and why? What was the outcome?
3. When leaders in your school are pursuing priority improvement goals how much emphasis do they give to finding school-based causes of the student outcomes you are trying to improve? How easy or difficult is it to discuss those causes?

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Core Reading

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