

# CASE REVIEWS: IMPLEMENTING THE SPIRIT OF FORMATIVE ASSESSMENT<sup>1</sup>

## Introduction

The following two cases provide vignettes about teachers who are attempting to implement formative assessment in their schools. The two vignettes are from a study by Earl and Timperley (2014) that showcase examples from a secondary school mathematics department. The first case shows an example of a teacher implementing the “letter” of formative assessment. In the second case, the teacher is working to apply the “spirit” of formative assessment, as she challenges her mental models about teaching and learning.

In both cases, the math department chair asked teachers to present a short description of their assessment practices at a faculty meeting, and to bring some examples of assessment materials to share with their colleagues. All the math teachers have attended at least one workshop on implementing formative assessment, mostly at workshops specifically for mathematics teachers. Their project is called “assessment for learning” or AfL, which you will see referred to throughout the text. This is another term for formative assessment.

## Directions for Review

As you read these cases, make note in the margins using the icons listed below.

- Ⓐ Evidence of the letter of formative assessment implementation
- Ⓢ Evidence of the spirit of formative assessment implementation
- ⓘ Surprising or interesting idea that impacts your thinking about leading formative assessment

### Case 1: Joseph

I haven't had a chance to change a lot to get on board with assessment for learning. At the workshop I went to, they emphasized that we need to tell students about the learning outcomes, make sure they know the criteria, get them involved in self-assessment and give them feedback. I think I've always done most of that. I used to tell students what we were studying and they always know that I give marks for showing their work and for getting the correct answer. Now I give them a schedule of all the topics for the year to put in their agenda book. When we start a new topic, I take time to talk about what is important in this unit and about how I will be marking their work at the end. I brought copies of a couple of them for you to see, from the unit we started last week on measurement and geometry, specifically solving problems involving perimeter, area, surface area and volume.

I've changed some things that I do in class as well. Now I start with a little quiz at the beginning of the unit, just to get them thinking about this stuff again. It was interesting. It was pretty cool. A few of them already have a good idea about perimeter and area. I guess I always knew that but the pre-test helped me see it. I think I'll use those kids to lead the groups. They can help the others.

### Notes

<sup>1</sup>Earl, L., & Timperley, H. (2014). Challenging conceptions of assessment (pp. 328-331). In C. Wyatt-Smith, V. Klenowski, & P. Colbert (Eds.), *Designing assessment for quality learning*. Dordrecht: Springer.

At the end of each class, I give them a spot quiz on the day's work. They peer assess by classifying each other's work on a three-point scale from 'limited understanding' to 'thorough understanding' of the content and the concepts. And we do a quick round with traffic lights to get a mark. If their peer assessor flips over green, they get a 10, orange is a 7 and red is a 5. They just leave the cards on their desk and I look over the quizzes and put a quick record in my marks program. I'm thinking I might even let them do it as a self-assessment sometime soon. I think they are pretty good at marking their own work. Maybe I'll do it with a check by their peers for a while, just to be sure. When it comes to feedback, I'm really trying to give them all feedback. Of course, the marks are the best feedback. They always know where they are. But I also give constant verbal feedback walking around. They like it when I stop and have a look. After the final unit test, I discuss where common mistakes are, remind them that these same questions could be on the final exam, so they should remember to study them. Overall, it has been pretty easy to incorporate formative assessment into what I do.

## Case 2: Serena

*Serena takes a moment to set up a video recording before she begins her presentation.*

I thought I would talk about my assessment practices by showing you some of the work that one of my students has been doing. I have to tell you that this has been really hard and we're not happy with where it is yet, but here goes. We're working on polynomials. After the assessment workshops a group of us decided to work together on a collaborative project related to AfL. So, I'm really representing all of us. To start with, we invited one of the central office consultants who had done the workshop to work with us. She surprised us by starting with the curriculum documents and talking about all of the outcomes we had to cover. She helped us really get focused by clustering the outcomes and thinking about how we would ensure coverage of the whole course. We also talked about the need to work with concrete manipulative materials, especially for our weaker students. None of us had ever really used manipulatives; we weren't sure how they would help or how to use them.

At the end of the meeting we decided the best thing to do was to do something. The grade 10 unit on working with polynomials seemed like a good place to start. The consultant agreed to meet with us regularly and to spend some time in our classes, helping us. We decided that we would develop assessment for learning tasks together and that we would prepare quizzes and the final exam together as well. We planned the unit together. That was really interesting because the consultant asked us to identify where kids have difficulty with polynomials. That was harder than we thought. Most of us are good at math and we weren't sure what parts were difficult for students. And we had to shift our thinking from how we teach to how they learn. I think that was the biggest shift for us. We had to think about what it means to learn polynomials. First we had the kids actually do some polynomial tasks and then we used their responses to figure out what they were thinking. We spent a whole meeting looking at the student work and talking about it through the kids' eyes. Then we had to devise ways for us (and the kids) to see where they were and what they needed to do next to 'get it'. Over the next few weeks we went through a process of learning ourselves and trying things out. At the time, it seemed pretty random but we reflected on it for this presentation and we think these were the elements.

- *First was the planning, or course and realizing that we had to change our way of thinking. We needed to know how they were learning, not just what.*
- *We looked at kids' work, and used the discussion about the places that kids were having difficulty with polynomials to develop a series of AfL tasks—some written, some observational, all tied to the 'knotty problems' as we call them.*

## Notes

- We explicitly identified the learning goal for each lesson, wrote it on the board, and told the kids what we were teaching and what we wanted them to have learned and be able to do at the end. We even talked about the 'knotty problems'—difficulties that lots of students have with this topic, and how we'd be looking for them.
- We used the AfL tasks when we needed them to identify the places where students needed direct instruction and more practice and when we needed to know how they were processing difficult ideas. Usually we read them through and give comments. Sometimes we have debriefing sessions with individuals or groups. The tasks really helped us know what to do next.
- We spent some time with the class just working with algebra tiles, getting them to play with them, asking questions – what was  $x$  and what was  $y$ , what was positive and what was negative, showing expressions using the tiles, talking about what they were doing and thinking.
- After a while, we started using the smart board with virtual tiles and doing the same thing. We modeled expressions on the smart board. We had the kids at the board and at their desks touching and manipulating the tiles. And we introduced the algorithmic approach as well. But we had the kids check their thinking by using the tiles. We wanted everything to focus on getting them to show what they are thinking. All the kids check with the tiles. Even when they have a good understanding, it doesn't hurt them and it makes it okay for the others to keep doing it and for us to see how things are going, in their heads.
- And feedback, lots of feedback. Because we had designed the AfL tasks around the difficulties that students typically had, we knew what to look for. When I walk around the room now, I give really specific feedback. I take them back to the 'knotty problems'. I write explicit comments on the AfL tasks so that they know what to do next and I invite some of the students to work on the smart board so that I can see what they are thinking. The kids are starting to give one another feedback too. Because they know what they are doing and can explain it.
- The kids were always working in groups and, from the beginning, we had them explaining their solutions and their thinking—sometimes to one another, sometimes at the smart board with the voice recorder going, sometimes to us. Having them communicate their thinking in spoken and written words was really important. How else could we know what to do next?

So let me show you what happened with this video recording.

This is Ben, working on the smart board. Many of you know him already from other classes. I've had him before and he really struggles with this work. And he doesn't have any confidence so he kind of checks out a lot of the time.

*(The image shows Ben working at the smart board as he works through a polynomial equation. He is using the algorithmic approach to the problem and talking about his thinking as he goes.)*

See, he stopped there and realized he had made a mistake. And right away, he pulls up the virtual tiles and does the problem that way. Then he goes back to the algorithm and corrects it and explains why.

I have to tell you, this is exciting and really scary. I hope this is what they want at the district because it is really different from traditional assessment. But it is exciting because we thought we had made the quizzes and final test pretty hard but the kids did well. They were proud and so were we. They were feeling good about their learning. And it's scary, because we have so much to learn. I hate doing things that don't feel comfortable. I think if I didn't have the group, I'd go back to what I was doing. But, we're pressing on. Next is geometry. We're going to do the same thing and this is a place where we can already see it will be hard. There isn't a formula for doing this. We have to really find out about how our kids are thinking. None of us are very confident that we know how to deconstruct the difficult concepts in 3D geometry. I never thought I would be learning more about math, as well as about teaching. I thought this was about assessment. But they are all mixed up together.

## Discussion Questions

After you and your partner have read the two cases, share your initial thoughts, including a brief review of icons you wrote in the margins. Did you and your partner pull out similar evidence of the spirit vs. the letter of formative assessment implementation?

Then consider how these cases help you think about leading formative assessment? What are the implications for layering formative assessment on top of an existing approach to instruction that does not align with formative assessment? What might you do to support teachers to implement the spirit of formative assessment?