



The Case of the “Maybe” Math Teacher (ISFP)

Coach as Encouraging Sage (Sensing and Feeling)

Coaching Issue

Mikki has asked for help. She teaches classes designed to help urban middle school students develop the skills they’ll need to thrive in college. One goal of the program is improving student ability to think like mathematicians, but there isn’t any set curriculum. Mikki openly admits, “My strengths are language arts and history, not math. I’m not exactly a victim of math anxiety, but I’m hardly qualified to create an effective program from scratch.”

Mikki’s classroom contains artifacts from the students’ varied cultural backgrounds, pennants and posters from colleges around the country, and organizational devices such as a whiteboard that students keep updated daily with reminders of homework assignments in their other classes. Students seem to know she cares about each of them and an air of respect reigns in her class. Usually, Mikki can keep control with a soft voice.

Mikki requires each student to keep an organized binder, use the assignment whiteboard to keep their individual planners up-to-date, and carry an outside reading book at all times. While each day of the week covers a specific topic or purpose, Mikki makes sure to use a variety of activities to keep up student interest. For example, she taught note-taking skills with a movie of a ping-pong-playing cat. Students practiced forming higher-level questions by exploring political issues.

Mikki visited one of her peers at another school who ran small group math “tutorials” once a week, on a day where four to six college tutors worked in her classroom. Students brought problems from their regular math classes and asked for help from group members in solving them. To Mikki, the math stayed at a lower level, although the students at least were learning how to get homework help.

“I’d like to use my tutors to guide the students in the kinds of open-ended problems with which the math teachers are seeing their students struggle. Maybe if all my students had more practice, their confidence would spill over into the regular classes. But how do I get started?”

She read a sample problem one of the math teachers had given her, saying that she didn’t really understand how to do it. “And, to be honest, I’d just want to be *shown* how to do it—the exact opposite of what I want my students to learn how to do!”

Last year, the ratio of girls to boys at the all-school dance was three to one. How would attendance have to change in order for the ratio to be one to two, which would be a better idea if more girls than boys actually want to dance? Note: Your answer must be quantitative, not qualitative!

Mikki voiced her concerns. “Neither I nor the tutors are very confident in our ability to lead math—and we don’t want to confuse the students. Help!”

Key Element: Use a common framework for unbiased reflection on education

- Compare small group work on math tasks that require higher-order thinking to your common framework. Which students will be most comfortable? Which teachers would need to change the most to implement this strategy? Why?
 - Which type preferences naturally fit with math instruction? Open-ended tasks? Group work?

Key Element: Understand the teacher's strengths and beliefs about teaching and learning

- What does Mikki believe about these math tasks? How will her strengths help her? Where might she need the most support?

Key Element: Provide information and evidence that can influence the teacher's beliefs

- In this case, Mikki has very little information about how to implement small group work on these kinds of math tasks. What information does she need? In what forms will she be most open to receiving it?
- What evidence will Mikki need to know the strategies are working for her students? What task design elements will easily produce this evidence?

Key Element: Meet the needs of the teacher during change

- Mikki's natural style is "Coach as Encouraging Sage." Compare your own coaching style to Mikki's style. What will be important for you to remember?
- What coaching techniques might work best in helping Mikki successfully integrate this teaching strategy?

Key Element: Relate or apply what is being learned to the problem the teacher wants to solve in his/her classroom

- Spell out Mikki's goals. Ensure that your strategies, information, and evidence support her goals

Now wrap your ideas into an Action Plan

Use the above information to suggest a plan for how you can help Mikki implement small group work for higher-level math tasks.

| Goal | Coaching strategy | Coach's role | Evidence of success |
|------|-------------------|--------------|---------------------|
| 1. | | | |
| 2. | | | |
| 3. | | | |

A Possible Coaching Approach for Mikki

Key Element: Use a common framework for unbiased reflection on education

- Compare small group work on math tasks that require higher-order thinking to your common framework. Which students will be most comfortable? Which teachers would need to change the most to implement this strategy? Why?
 - Which type preferences naturally fit with math instruction? Group work? Open-ended tasks?

While students and teachers with any combination of type preferences can succeed in mathematics, it is the natural domain of people with a preference for Thinking—all numbers and no people!

Often, small group work appeals more to Extraverted types than to Introverted types.

The open-ended nature of the kinds of problems Mikki plans to use favors the Intuitive preference over Sensing: Sensing students often feel more comfortable following a process or an example.

Sometimes, Perceiving teachers find it easier to work with these kinds of problems since student approaches take varying amounts of time and fruitful but ineffective strategies often lead to new learning. Judging teachers struggle to let the work unfold as opposed to their natural bent of sticking to a schedule for class work.

Key Element: Understand the teacher's strengths and beliefs about teaching and learning

- What does Mikki believe about these math tasks? How will her strengths help her? Where might she need the most support?

In this case, the coach as an easy job since Mikki already believes that students will benefit from this strategy and is eager to implement it.

However, the ENT nature of the tasks goes against Mikki's ISF personality. She will be looking for content and groupwork design assistance. You can draw on some of her natural Sensing and Feeling strengths (see the "Coach as Encouraging Sage" information sheet)

- *Her ability to create a respectful classroom atmosphere will foster productive groupwork. Draw on her suggestions for norms, seating, assigning groups, etc.*
- *She'll be looking for details—and she'll use them to structure a good process. Think through supplies, processes, the ways groups will record their work, and summarization techniques. Have extensions ready for groups that finish quickly.*
- *She will enjoy the opportunity to work with smaller groups of students, or one-on-one with those who are struggling. Make sure she sees her role as interacting with each group, not starting the task and letting the groups work completely on their own, a misnomer many teachers seem to have.*

Key Element: Provide information and evidence that can influence the teacher's beliefs

- In this case, Mikki has very little information about how to implement small group work on these kinds of math tasks. What information does she need? In what forms will she be most open to receiving it?

- *Given her style, Mikki will be most comfortable if you provide the format for the group work. Don't give too many options. Instead, make a plan and ask for her input. She may need to see it in action before making changes, but most likely will have valuable suggestions once she's gained some experience with it.*
- *She's asked for direct help in finding appropriate math problems. Consider providing several in a ready-to-go format. You might also locate books or internet sites for her, but if you do, mark specific problems for her to use right away.*
- *She might also want to visit a mathematics class to watch groups in action as well as examine samples of student work so she has a clear picture of what might happen.*
- What evidence will Mikki need to know the strategies are working for her students? What task design elements will easily produce this evidence?
 - *She'll want to see that students are engaged in the tasks. Make sure you start with sure-fire high interest scenarios that relate to the students' lives or involve interesting manipulatives so the strategy gets off on the "right foot."*
 - *Include a process where each student completes work as part of the group work. Then, review a few weeks' work with Mikki to help her see growth and/or make midstream process corrections to help any struggling students.*
 - *Have students do a quickwrite on what they are learning about thinking like mathematicians.*

Key Element: Meet the needs of the teacher during change

- Mikki's natural style is "Coach as Encouraging Sage." Compare your own coaching style to Mikki's style. What will be important for you to remember?
 - *If this isn't your style, the key elements to keep in mind are the need for encouragement, clear direction, and modeling. Your job is to build Mikki's confidence quickly by coaching her in her own style—then she'll take off. Soon you may be adopting her innovations with the group work!*
- What coaching techniques might work best in helping Mikki successfully integrate this teaching strategy?
 - *Modeling and co-teaching are probably two of the most important roles you can use with Mikki. She may quickly take over, but then ask for help again if a given problem is harder for her.*

Key Element: Relate or apply what is being learned to the problem the teacher wants to solve in his/her classroom

- Spell out Mikki's goals. Ensure that your strategies, information, and evidence support her goals
 - *Mikki wants her students to gain math confidence, develop the ability with higher-order thinking problems, and work well in groups.*

Now wrap your ideas into an Action Plan

Use the above information to suggest a plan for how you can help Mikki implement small group work for higher-level math tasks.

| Goal | Coaching strategy | Coach's role | Evidence of success |
|---|---|---|---|
| 1. Design an effective structure for group work | Co-planning | Find models, suggest initial structure | Mikki is satisfied with student interactions and learning |
| 2. Rigorous problems | Providing resources | Ready the problems for classroom use until Mikki has the confidence to do so. Include, where possible, examples of student work so Mikki can prepare. Include teaching notes: problem goals or standards tie-in, possible student mistakes, sample facilitator questions, and extensions. | Student work on problems shows higher-order thinking |
| 3. Help Mikki become confident in using the groupwork structure | Modeling, gradual release of responsibility | Model launching activities with students, roaming to assist groups, and summarization. Review student work with Mikki and collaborate to improve process | Mikki is able to lead the activities herself. |

Note that the evidence of success looks not just at whether Mikki implemented the groupwork structure but at whether she feels students are learning.