

Tapping Teacher Strengths to Develop the Mathematical Strengths in Each Child



Jane Kise, Ed.D.
Differentiated Coaching Associates, LLC
www.edcoaching.com
jane@edcoaching.com

National Council of Supervisors of Mathematics
April 11, 2011
Indianapolis, Indiana



Three Premises

- There are no resistant teachers, but rather, only teachers whose needs during change have not been met
- “Currently, many students have difficulty because they find mathematics meaningless. Without the connections that reasoning and sense-making provide, a seemingly endless cycle of reteaching may result.”
- Research clearly points to elements necessary for mathematics tasks to be implemented at a high cognitive level

(NCTM Focal Points for High School Mathematics October 6, 2009)

7



Factors Essential to Maintaining the Cognitive Demands of Rigorous Tasks

- Students have sufficient information to engage in thinking and reasoning; teachers scaffold but avoid overstructuring
- Teachers go beyond accuracy to concepts and meaning, pressing students to justify, explain, and reason by questioning them and providing feedback
- Teachers provide sufficient time for exploration (not too much or too little)
- Teachers structure tasks to build on student prior knowledge and interests to create motivation

Implementing Standards-Based Mathematics Instruction. Stein, Smith, Henningsen, Silver, NCTM & Teachers College Press.



Coach: A vehicle for taking valued people from where they are to where they want to go

Coaching is the art of guiding a person to:

- Identify and develop his or her strengths
- Recognize and manage blind spots and developmental needs
- Strategize for career and personal development



13



Why Differentiated Coaching?



- Teachers form their practices around what they do best
- Their strengths are related to their personalities
- Their personalities drive their educational beliefs
- Changing their practices means changing those beliefs
- That makes change very, very difficult



Essential Elements of a Common Framework

- Describes teaching and learning in nonjudgmental ways. No one should feel labeled.
- Be strengths-based, emphasizing how each person teaches and learns rather than suggesting limits on what they can do.
- Describes which learning styles a practice will reach.
- Applies across cultures and to both adults and students.
- Provides bridges among varying staff development efforts.

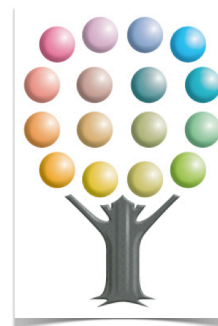
Kise, Differentiated Coaching (2006)



Personality Type

Normal differences in how we

- Gain Energy
- Gather Information
- Make Decisions
- Approach Work and Life



12



A central tenant of type theory:

...that all types have the potential for competence but that their preferred processes may put them at a temporary disadvantage until they can find a means (or a mentor) to assist them in the transition to the unfamiliar territory of new learning.

Myers, McCaulley, Quenk & Hammer

35



Coaching Card Discussion

- Choose a card that describes a teacher whose coaching style is different from your own
- Read the short description of the teacher's strength, corresponding struggle, and coaching move
- Discuss:
 - How might this teacher excel/struggle with MCDT?
 - What might cause this teacher to “resist”?
 - What surprises you about this teacher's coaching needs?
 - How might you excel/struggle in meeting those needs?



Next Steps

- Read “Who You Are is How You Teach” from *Differentiation Through Personality Types* (download from www.edcoaching.com)
- Use Handout 2 (session handouts, www.edcoaching.com)
 - ASK people how they want to be coached
 - IDENTIFY where you struggle to adjust to the other style and come up with strategies for yourself. Remember, it's the teacher who has to do the hard work of change.
- Cognitive Demands of Tasks. Use these as a focus for identifying strengths and needed strategies for teaching
- Website: Full descriptions, case studies, summary of research on type and how students master math tasks



Differentiated Coaching

Helping teachers understand where their strengths and beliefs lock them into practices that limit their freedom to help students to succeed.

It isn't freedom for teachers to do what they please, but freedom for them to entertain possibilities and stay open to new avenues for professional growth.

40

My Ideal Coach

Read through the following descriptions. Think back to how you viewed coaching before you had any formal training. Which description is closest to what you would have sought in a coach? Note that you may like (or dislike) elements of each description. Choose the style that overall would be the best match for how you learn. And, note that all are just a tad exaggerated to illustrate the differences.

<p>Coach as Useful Resource If you really want to help me differentiate instruction, give me hands-on, relevant lessons that I can use right away in my classroom—with tangible results!</p> <p>Take time to answer my questions on implementation, right down to the minutes each lesson element might take, what materials to use, how to group the students, etc.</p> <p>I might want to see you model it, but often if you give me something ready-to-go, I'll test it out. If it <i>works</i>, believe me, I'll be back for more!</p>	<p>Coach as Encouraging Sage Instead of looking at theories or general ideas, let's set goals for trying one new, concrete task or strategy at a time. If you provide too many choices, I'll assume you want me to perfect all of them at once!</p> <p>Talk with me about what to expect, model it, and then watch me so you can provide feedback right away—including what I'm doing right, as I'm all too aware of what goes wrong. Coaches should be friends who are there to encourage me in working on new skills.</p>	<p>Coach as Collegial Mentor I get all kinds of creative ideas from books and workshops. Let's add my ideas to yours and together decide what's best for my students. I'd love your thoughts, then, on how to make it work well the first time.</p> <p>I don't think there are one-size-fits-all solutions for teachers or for students, so treat me uniquely, just as I treat my students as individuals.</p> <p>You're welcome to observe any time, but I only need modeling if a strategy requires more structure than I'd have needed as a student!</p>	<p>Coach as Expert I do a fair amount of investigating, by reading or taking with colleagues, to stay on top of my field, so please bring only cutting-edge strategies. Have the theoretical background or research handy—I may want to look it over.</p> <p>Know that I often ask pointed questions. That may feel critical, but my questioning indicates that your ideas have merit and I want to understand them.</p> <p>While you're welcome in my classroom, and I will take your suggestions, much of my learning will come through our dialogues.</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Adapted from Kise, J.A.G. (2006), *Differentiated Coaching: A Framework for Helping Teachers Change*. Thousand Oaks, CA: Corwin Press, pages 146-148. For workshop use only. Please contact jane@edcoaching.com for permission to reproduce.

Maintaining the Cognitive Demands of the Task

The National Council of Teachers of Mathematics (NCTM) has identified seven factors that correlate with high-level math instruction. The following chart synthesizes the information from the NCTM (*Implementing Standards-Based Mathematics Instruction: A Casebook for Professional Development, 2nd ed.* by Stein, Smith, Henningsen and Silver. New York: Teachers College Press, 2009) with how teachers with different preferences struggle with these factors. The teacher comments came from a group of 25 math teachers who knew their type preferences and discussed how their preferences affected their strengths and struggles with implementing these factors.

Factors present in high-level cognitive tasks	Teacher comments about their preferences
1. Students have sufficient information to engage in thinking and reasoning; teachers scaffold but avoid overstructuring.	<p>Sensing teachers tend to use procedures well and rely on them in teaching</p> <ul style="list-style-type: none"> I struggle with “over-proceduralizing.” Many students don’t grasp a concept even with my “six step process.” Others...can go straight to the big idea. I do specify procedures in an effort to help students succeed—I often think I have the “best” method. <p>Intuitive teachers tend to understructure in ways that can hinder student reasoning</p> <ul style="list-style-type: none"> Student questions often point out how my directions are incomplete or my questions are ambiguous For hands-on activities, I often forget to think through structure and add it when students don’t get good results
2. Teachers focus on concepts and meaning	<p>Sensing teachers</p> <ul style="list-style-type: none"> I have problems pushing past correct answers to meaning. I look for all problems completed, thinking after students have tried problems, their questions will come <p>Intuitive teachers</p> <ul style="list-style-type: none"> Sometimes it is hard to explain/justify an answer because it just is. I don’t know how to break it down. Sometimes I get caught up in lengthy explanations of concepts the students aren’t ready to hear!
3. Teachers provide sufficient time for exploration (not too much or too little)	<p>Judging teachers</p> <ul style="list-style-type: none"> The stressed need to “Summarize” lessons keeps me “on clock” I worry so much about covering the power standards that I fall short of student mastery on some. <p>Perceiving teachers</p> <ul style="list-style-type: none"> Class time is over-filled. Sometimes (often) we do not get to review, recap, or ponder and I release students late. I sometimes misjudge a problem’s complexity or assign homework that takes more time than I intended.
4. Teachers structure tasks to build on student prior knowledge and interests to create motivation	<p>Intuitive teachers</p> <ul style="list-style-type: none"> I don’t always pre-evaluate prior knowledge enough (I <u>think</u> I have!) Very true, so I’m usually giving instructions as the class period moves forward <p>Sensing teachers</p> <ul style="list-style-type: none"> Very true...right on. I struggle to stray from curriculum. It’s hard to keep separate whether students don’t like me or whether they don’t understand a task!
5. Teachers or capable students model higher-level performance	No significant differences among teachers with different personality preferences
6. Teachers go beyond accuracy, pressing students to justify, explain and reason by questioning them and providing feedback.	<p>Intuitive teachers</p> <ul style="list-style-type: none"> I move very quickly through solutions, especially on concepts I think are easy. I don’t let incorrect thinking go unrecognized but I sometimes allow students to get away with not applying high level thinking
7. Students are provided with means to monitor their own progress.	No significant differences among teachers with different personality preferences