

Coaching for Ambitious Science Teaching: Experiences of a Beginning Coach

Kirsten Rooks

University of Washington, Master of Instructional Leadership, 2015

Abstract:

The goals of this action research project were to answer the following questions: “Can a beginning coach help a beginning teacher implement Ambitious Science Teaching (AST) methods, thereby increasing his students’ engagement and improving their behavior?” and “How will this experience affect the coach’s practice?” I worked as a volunteer coach with Mr. Thomas two to four times a week for three months, primarily in one section of his ninth grade Physical Science class in a large urban high school. I employed coaching cycles focused on AST methods and classroom management. Findings indicate the dissonance between the great intentions of both the new teacher and new coach and the realities of the challenges presented by students, colleagues, and limited time and experience.

Literature Review:

The importance of mentoring to new teachers:

Quality mentoring is perhaps the most effective forms of professional development for beginning teachers and can lead to “reduced feelings of isolation, increased confidence and self-esteem, professional growth, and improved self-reflection and problem-solving capacities” (Hobson, Ashby, Malderez, & Tomlinson, 2008, p. 209)

The effects of classroom management:

A number of factors must be in place to create effective classroom management:

- a classroom culture built on mutual respect, caring, belonging, trust, and a belief in students’ abilities;
- classroom practices that create well-structured lessons, reinforce expectations, and couple frequent observations with fluent correction and frequent praise; and
- an engaging, relevant lesson in which students actively and collectively work on stimulating tasks.

The benefits of Ambitious Science Teaching:

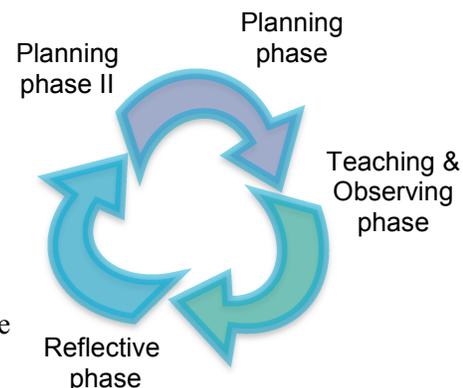
Ambitious Science Teaching creates engaging and relevant lessons by:

- building on students’ existing understandings to make science more authentic and relevant;
- teaching students to connect their prior knowledge, investigation results, and scientific ideas to make sense of “big ideas in science;” and
- being student-centered - students actively build knowledge through investigations with other students.

The methods of effective instructional coaching:

The coaching cycle is an iterative process through which teachers learn to be more self-reflective to effectively tailor their instruction in the future. The teacher and the coach openly discuss observations of the instruction and students’ responses and ask probing questions about the effects of particular strategies on student outcomes. There are four basic phases:

- *Planning phase* - The teacher selects a specific instructional strategy to use in class aimed at achieving a particular goal in student learning.
- *Teaching phase* - The teacher employs this strategy in the class. The coach observes and records the teacher’s practice and the students’ response.
- *Reflective phase* - The teacher reflects on the success of the strategy while the coach provides observational evidence and feedback. They maintain or alter the strategy to increase its efficacy.
- *Planning phase II* - The teacher plans to employ the strategy again, and the cycle restarts.



Coaching Cycle

Data Collections Methods:

- *Coaching Meeting Notes*: Notes, ideas, and questions from our coaching meetings
- *Meeting Notes*: Notes on conversations with Mr. Thomas, his colleagues, and administrators
- *Observation Notes*: Notes and wonderings primarily from fifth period classroom observations; Focus on instructional strategies and students' reactions, engagement, and behavior; Observation notes from his other classes for comparison
- *End-of-First-Semester Student Survey*: Students' numerical rating and short answer responses to questions such as: "My teacher encourages us to share our ideas and help one another," "I can focus and learn in this class," and "My teacher tries to help when I am struggling to understand something."
- *Beginning and End-of-Project Teacher Questionnaires*: Questions about Mr. Thomas's instructional goals, teaching and professional development background, and attitudes and support from his colleagues and administrators.

Findings:

- A new teacher, who is part of collaborative planning and teaching team that uses a traditional curriculum, will have a very difficult time implementing AST methods or an AST-based curriculum.
- However, it is possible for the teacher to incorporate some AST strategies to make a traditional curriculum more student-centered.
- For new teachers, there is a tension between wanting to implement student-centered instruction and wanting to have control over class behavior.
- Strong collegial and administrative support for a new teacher fosters a willingness, and even determination, by the teacher to improve his pedagogy through a practice of seeking help from others and actively reflecting on his own instructional practice.
- For an instructional coach, inexperience combined with an unofficial/volunteer status engenders a practice of "coaching light," which places less emphasis on hard data and strict coaching cycles, and is, therefore, ultimately less effective.

Implications for Future Practice:

- Mr. Thomas looks toward his second year of teaching with determination to incorporate more student-centered teaching practices and clearer and stricter rules.
- Ambitious Science Teaching is aligned with the Next Generation Science Standards (NGSS) which will be implemented in Washington State soon. I would hope that Mr. Thomas will work toward a leadership role within his science department so he can help lead his colleagues as they adopt or replace their curriculum to be more NGSS-aligned.
- From this project, I recognize the dissonance between what I understand as good coaching practice, according to theory and best practices, and what I actually did as my coaching practice. Though I did no harm, I was not nearly as effective as I could have been. I would therefore like to continue to improve my coaching and teacher leadership skills.
- As I have become more familiar with both the promise and challenge of implementing NGSS throughout Washington State, I recognize that I have a useful knowledge and skill set as well as a desire to be part of that process.