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ABSTRACT

This paper describes: the characteristics and value of a research-supported rationale for teaching; mechanisms for teaching others how to develop and maintain a personal teaching rationale; and ways teachers can use their own rationale to improve their own and others' teaching. It focuses on using the rationale approach in teacher education. Section 1 describes the ideal teacher, noting that such a person should have a strong and personal research-supported rationale for teaching. Section 2 examines the meaning of the word rationale in the context of teaching. Section 3 discusses the rationale as a teaching and learning tool. Sections 4 and 5 focus on generating and developing goals for students and on the teacher's role, highlighting a number of proven and essential aspects for using the rationale process as a core of a teacher education course or program. Section 6 discusses the rationale defense required of student teachers at the end of the semester. Section 7 discusses how student teachers have benefited from having to develop and defend their rationales over the course of the preservice teacher education program. (Contains 11 references.) (SM)

THE RATIONALE PAPER: STRUCTURED REFLECTION FOR TEACHERS

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By definition, the very best teachers have significant impact on the learning of their students. Typically, these exceptional teachers have reasons for what they are doing; they have rationales. While these teachers have valid reasons for their actions, rarely do they have rationales that systematically build on their knowledge of research related to teaching, learning, and the discipline they are teaching. This paper describes the characteristics and value of a research-supported rationale for teaching, mechanisms for teaching others how to develop and maintain a personal teaching rationale, and how to use your own rationale to improve your teaching and the teaching of others.

The Ideal Teacher

Most of us have visions of the ideal teacher. In our imagination this exceptional person teaches masterfully, with every aspect of the classroom and students organized and considered in the learning process. Little is left to chance and, even though we may not see all of the instructional strategy, we do see the pieces coming together as seamlessly as a great concerto, with desired student learning as a final crescendo. Further, we might well describe this ideal teacher as one who not only teaches effectively but who understands well the role of the teacherand how this teaching and role today relate to yesterday and tomorrow. Our ideal teacher

understands and probably uses the history and research behind the teaching we see. And, while we are dreaming, we might go so far as to ascribe to our exemplary teacher the desire and ability to explain her or his ideas while teaching others how to be just as skilled, rational, and knowledgeable.

If we are imagining the exceptional, why not go a step further and imagine how we might systematically help all teachers to be as described above? What would help all teachers attain the powerful heights of those teachers we know as the most outstanding? This paper focuses on one process that has shown itself to be a significant part of the arsenal of truly exceptional teachers -- developing and using a strong and personal research-supported rationale for teaching.

What Is A Rationale?

After teaching for two years, I was assigned a student teacher. I recall that at the beginning of the experience she asked me, "What is your philosophy of education?" Not ever having thought about it for more than a moment, I still easily recited some platitudes about motivation, encouragement, and being professional. It must have done the trick as she asked me no more on that subject and moved on to doing what student teachers often do, imitating their cooperating teacher. Then, while working with Professor Dorothy Schlitt at Florida State University a few years later, I was again confronted with my own understanding of what should be happening in classrooms. This time, however, I came to see the potent value and efficiency of developing a personal rationale to guide my teaching, to promote my understanding of the

dynamics of the teaching and learning process, and for explaining my thoughts and actions to others.

Dorothy, easily the most masterful teacher educator I have ever known, had an equally powerful teacher education program. Following a quarter of observation in the local secondary schools, Dorothy had managed to create a science methods course that met full-time for the entire next quarter. During this quarter, students took no other courses! Then, they usually student taught the next quarter. With so much time, Dorothy (an early Piagetian and constructivist) was keen not only to have her students teach in a skilled manner, she wanted them to provide explanations of their classroom actions. She wanted them to have a rationale for teaching.

To Dorothy, "rationale for teaching" meant having articulate goals for students, justification for the content chosen for teaching, a clear description of the role of the teacher and students, and an evaluation plan for all aspects of the curriculum, including the teacher, students, and overall program. During the time I worked with Dorothy, she developed the rationale into a system whereby each student wrote a "Rationale Paper" (many confused "rationale" with "rational" with some attempting to write "Rational" Papers) and then defended it with her in an individual session.

Many of my early memories of those years were of sitting in a chair behind a student who was busily defending a rationale. I took notes, listening carefully as Dorothy asked a series of

questions that caused the student defendant to think, respond, reflect, and eventually come to new understandings about their papers and their personal rationales. As Dorothy probed, she was also modeling the use of questions, wait-time, and response patterns to the student at hand. I was fascinated by how Dorothy's adept use of questions both allowed the student to stray to the limits of his or her knowledge (and, sometimes, to the chagrin of the student, beyond) and yet followed a highly predictable path. Equally amazing to me was that I could actually see the student's reasoning unfold, change, and, as the limits of knowledge were reached, how the reasoning began reverting to quite primitive levels. Even so, I truly marveled at the broad knowledge of her students and how adeptly they used the research of the time. These pre-service teachers certainly knew far more of the research literature than I knew as a high school teacher. At the same time as they were learning, I was formulating my own rationale and notions of how important a rationale was for any teacher.

While at first I saw the value of a rationale paper for assessment and in getting students to describe and reflect on their practices and defend them, later I found a number of additional positive effects. During the 27 years I have featured the rationale paper in my own teacher education programs, I have found that students who completed such papers:

- Took their goals for students more seriously
- Spent more time reflecting on their teaching practices
- Remembered and used the research literature more regularly and more effectively

- During student teaching and even beyond were more likely to remember their desired goals and roles from methods classes
- Found the rationale paper to be an impressive asset during job interviews
- Had a rational basis for selecting the content to be taught in their classes and for revising existing curriculum
- Better understood the respective roles of teachers and students
- Used their rationales for defending and evaluating their actions as teachers and curriculum developers
- Were able to influence other teachers because of their rationales

Clearly, I can say without hesitation that without the rationale paper as a major learning force in my classes my students would have learned less about teaching, would have been less well prepared, and probably would not have received as many accolades, awards, and impressive positions as they have. Had Dorothy Schlitt not introduced me to this one simple concept, a rationale paper that brought together all a student knew about teaching, I would have taught reasonably well but I would have had nowhere near the success I now look back on. For me, the rationale paper has been a cornerstone for my teaching, my program development, and for my personal education. I find it truly a concept worth pursuing.

The Rationale As A Teaching And Learning Tool

When I first began as a teacher educator, I viewed development of a rationale as an end point in my programmatic efforts. Initially I assigned the paper, collected and read it, and conducted a defense, not unlike what Dorothy Schlitt had done so effectively. In the more than many years since sitting at Dorothy's feet (so to speak), I have continually modified my vision of what I wanted to see in a rationale paper, developed new ways to get students to develop one most effectively, and learned to conduct the defense so that maximal learning took place. Today, I see the development, production, defense, and use of a research-supported rationale paper as the center piece of any exemplary and effective teacher education program. The balance of this paper will focus on a number of proven and essential aspects for using the rationale process as a core of a teacher education course or program.

Generating and Developing Goals for Students

"If you don't know where you are going, then you will probably get there" describes well the need for goals. In this case, it is goals for students, not teachers, that we speak of. Asking teachers to describe how or what they will teach prior to asking about their goals is as meaningless an exercise as asking a traveler what route will be followed prior to determining the destination. We teach for specific, not random, outcomes. A rational teacher needs to begin with student goals. So, with this in mind, we begin with Generating Goals for students.

An effective way to begin is to assemble the teacher education class and ask, "What characteristics, attitudes, knowledge, and skills do you want your students to have after 13 years (K-12) of education? Run as a typical brainstorming session, where we write down verbatim what students offer and with no evaluation, this question usually generates 25 to 40 statements such as:

Students Will:

Solve problems

Be global citizens

Be creative

Have fun with science

Be able to communicate effectively

Work cooperatively

Identify problems

Be able to use laboratory equipment correctly

Know how to find information

Know how to learn

Understand basic concepts

Be able to use their knowledge

Be environmentally aware

Be positive and like the subject

Be able to self-assess

After having done this several hundred times with pre- and inservice teachers, scientists, and citizens (Penick and Bonnstetter, 1993) we find the list is almost always the same, regardless of the group generating it. For instance, the first suggestions are always very global (such as "be a global citizen") and often relate to attitudes. Many of the goals are expressed in a passive mode by stating "Be able to use laboratory equipment" rather than "Uses laboratory equipment." More surprising is that even groups of scientists rarely mention subject-specific knowledge as a goal. Never has anyone said "Know the first 20 elements of the periodic table" or "Recite the American Presidents in order." Sometimes, we even have to prod the participants in the brainstorming, saying something like, "Don't you want to include some content in here?" At that point, someone usually offers "Use knowledge." Some also get confused and offer teacher goals such as, "Encourage students" or "Teachers will be positive." If this happens, we just explain the difference between a student goal and a teacher goal and move on.

After generating the student goals usually we are left with a long list, half considered, highly redundant, and not clearly stated or heard. To overcome this, we now move on to Goal Development. Our purpose here is to narrow down the list of goals while, at the same time, developing consensus among the class group. Usually, we break the class up into groups of no more than six. Each group is told to "reduce the list of goals to 15 that you can all agree on."

After much discussion and debate, the task is soon completed. Then, to bring the entire class together, we often repeat the instructions, reducing the target to ten goals, this time expecting the entire class to work as one group. Usually, they have little trouble with this task, often lumping several goals together, eliminating a few, and rewording most.

In additional to ending up with a fine list of ten goals for students, several delightful side-effects occur at this time as well. For instance, when assigned the consensus task every pair of eyes in the class usually looks to the instructor in unison, seeking the usual teacher refrain, "Now, class I would like you to.... When they look to us in this way, we merely walk out of the room or turn away wordlessly. Without fail, with no teacher to tell them what to do, a student will get up, take chalk in hand, and ask, "OK, where shall we start?" In this way, the students, not the instructors, are taking charge of what are supposed to be *their* goals for students. At the same time, the instructors are allowing for and seeing student leadership in action.

As the discussions ensue at each of the levels, the students are talking more than the instructor, providing another fine opportunity for students to realize that their input is valued and desired. During these conversations and debates, students have far more time than is traditional to make their points. Consistent with the research on wait-time, rather than each student making a single-sentence remark, we find that they speak in paragraphs, and on multiple occasions. They are truly communicating with each other. They also are finding out how difficult it is to conceptualize and communicate their complex ideas clearly and how frustrating it can be to teach

others verbally. Finally, in the small groups in particular, students who would not routinely speak out in a large class setting often take full opportunity to present their ideas and to act as leaders.

In this process, we have helped students to construct their own goals and we as instructors have modeled the role of a constructivist teacher. Some students actually notice that this class has been very different, the instructor is different, and they are feeling pretty good about it all. But, the class is not yet over. Now that we have a list of ten or so agreed upon goals, the instructors inform the class that these ten goals will be considered to be the class goals for the semester and will also be among the goals that we, as instructors, have for our class of teacher education students. We use these goals continually, every day, primarily as a reflective device. For instance, when a student says, "In my class, we will have an activity every Monday," we can then ask, "How will that help you achieve your goals? or we might ask, "Which of your goals are you promoting with that idea?" Soon, students come to link lesson plans, classroom procedures, and teaching strategies with student goals. This is the beginning of a rationale for teaching and a mechanism for continuous teacher reflection on the teaching-learning process.

The Role of the Teacher

Having goals for students and reflecting on practice are necessary but not sufficient. For the rationale and the reflection to be more than random, for them to be focused in ways that lead to meaningful change, a teacher's rationale must also include the specifics of the role of the

teacher. For instance, we know that master teachers teach quite effectively. If an ambitious and hopeful beginning teacher asks the master, "What makes you so effective?" the answer must be specific to be useful. If the teacher responds with, "Get the students involved," the beginning teacher has no more useful information than you would get if you ask a rich person how you, too, can be rich and they respond, "Make a lot of money!" or "Buy low, sell high." If we knew how to do anything with these words, we would not need the advice we were seeking. What we need instead are descriptions of skills to learn and practice, knowledge to understand, tasks to be accomplished, and roles to play.

Understanding and describing the role of the teacher requires knowing and understanding the patterns of teacher behavior desired, knowing how to describe the patterns, and understanding the effect of these patterns on students. To achieve this, teacher education students must learn to observe teaching and teachers systematically, perhaps using coding devices like the Teacher Assessment System (TAS) (Bonnstetter and Bonnstetter, 1986) or the Science Learning Inventory Categories (SLIC) (Shymansky and Penick, 1979). Many years ago, Ned Flanders noted that just learning to code a teacher's behavior actually influenced the observer's teaching behavior in a positive direction (Flanders, 1963). More importantly, as Dorothy Schlitt pointed out to me, how can two or more teachers hope to talk to each other about teaching unless they all know and understand a common language reflecting the actions and ideas of teaching? Learning to observe systematically teaches just that. We usually move our

students into accepting a prepared version of a teacher coding instrument so that they do not have to create one themselves.

Unfortunately, just knowing what behaviors a teacher is exhibiting does not inform us about what is best to achieve the desired goals. For this, we must now move to a study of applicable research. Here, we often do an activity we call Roles and Goals. We begin by presenting teacher education students with research related to teaching. Often, we use a condensed form that Charles Matthews of Florida State University originally called Research Supported Statements (RSS). These short statements, taken verbatim from the literature, are representative of education research and thought. Examples of these RSS include, "When teachers wait 3 to 5 seconds after asking a question before they call on another student, rephrase the question, or answer themselves, then students tend to provide longer answers," or "Evaluation inhibits creativity." The RSS allow students to see quickly and simultaneously a number of pieces of relevant research that have applicability to teaching. Now, we are ready to begin.

First, we put students into small groups. Each group gets three of the class goals with which to work. Their task is to determine which identifiable behavior of the teacher is supported by the research as ultimately leading to the desired goal, which behaviors are contrary to the goal, and which seem to have no research pointing one way or the other. Now, each group is developing a matrix. When all the matrices of the class are brought together, a pattern begins

emerging. For instance, if the goal under consideration is "Students will be creative," the research would indicate a need for avoiding evaluation and praise (Treffinger, 1978) while providing more open, accepting comments (Torrance, 1965). Creativity would not be supported by highly directive behavior (Payne, 1958) but would be enhanced by open-ended questions (Penick, 1993, 1994, Penick *et al*, 1996). Each goal eventually has a list of positive and negative behaviors such as these.

On combining the supported teacher roles from all of the student goals, a clear pattern will eventually emerge. For instance, virtually no goals will ever be supported by teachers rejecting student ideas, not providing adequate wait-time, or by using sarcasm. With these lists of positive and negative attributes, the teacher education students can now rationally (rather than arbitrarily) plan their teaching behaviors and strategies based on their goals and knowledge of the research literature. These teachers also now have a solid language and mechanism for communicating their ideas about teaching to others. They no longer have to speak just of their feelings as they design a desired classroom climate; instead, they can call on the research literature to support their ideas. As beginning teachers, having support for your ideas that may run counter to many traditional teachers can be quite useful and reassuring.

As students develop their rationales, they must continually reflect on their ideas in light of their goals and knowledge. This is what many exemplary teachers do consistently (Penick and Yager, 1983). Getting our students into such a habit will probably lead to effective and

professional patterns as classroom teachers. In class and during reflective times, we move students toward considering each of their proposed actions and activities in light of their goals. If there is a match, they move ahead. If not, they must then either change what they propose or change their goals. Few choose to change the goals that by now seem rather essential to them.

But, as they say, talk is cheap. As an assignment, we tell students they must prepare a written rationale paper that includes:

- Goals for students
- A brief justification for those goals
- Specific teacher behaviors, patterns, and strategies that will lead to these goals
- How content will be chosen
- How the students, teacher, and curriculum will be assessed and evaluated.

Typically, these papers are about 5,000 words in length (a little longer than this paper) and require more work than students initially imagine. Many have told us that they spent more time on these papers that any other college paper they have turned in. When asked how that happened, they often respond with some variation of, "This paper is real; it's mine and it describes MY classroom and I want the best classroom I can have!" Most say they wished they had started sooner by keeping notes and quotes that would have been helpful. Others remember that we suggest just that at the beginning of the semester

Defending the Rationale

But, writing the paper is just part of our plan. During final exam week, we meet with each of our students individually for 90 minutes. During that meeting, we ask the student to defend the rationale paper that has occupied his or her thoughts for the semester. We typically begin the defense session by asking how the rationale would have been different if it had been written a year ago, before the present class. As the individuals talk about changes in the last semester, they almost always begin to relax, as they are the experts here, talking of their own. Then, we move into asking about specific goals and how they will achieve them. Some students have clear ideas and speak eloquently of their strategies in very specific terms. Others seem to have difficulty in expressing themselves, even though they seem to have the ideas written down. Finally, some seem to have either written the rationale paper for the instructors rather than as a personal statement. These students don't have a rationale and it shows rather quickly.

We view this rationale defense as 90 minutes of individual tutorial, an opportunity to find out where the student needs help and to offer it. For most students this works well and they leave with considerable clarification. Others just leave. We don't however, let them off lightly. During the defense we ask questions that should be answered. When they are not, we don't confront the first time. Instead, we will return and try from another perspective. If they have it, we move on. Sometimes we will find a lack and we will teach directly if it seems warranted.

Other times we will ignore or merely guide them to a reasonable point. Over the years we have developed a number of strategies for making the defense effective.

Some Final Thoughts

For many years we had a sequence of courses through which our teacher education students moved as cohorts. In this sequence, students wrote a rational paper in the first and then revised is twice in the following two semesters, each time with a final defense. By the third time, each student had spent more time defending a rationale paper than our doctoral students had spent defending their dissertations. After three such experiences, students develop abilities to express and support their educational ideas, they learn something about writing, and they have a document of which they can be proud.

And proud they are as they present their rationale papers to cooperating teachers, principals when they interview, and to their parents as evidence of money well-spent. Some have used successfully their rationales as a core for grants and applications; most have found them valuable as a line of defense for their ideas. And, while we have little hard evidence to support it, we are convinced that a teacher with a rationale is less likely to lose that young idealism that most teachers begin with, often reverting to the norm within a few short years. From my perspective, these teachers with rationales are truly rational teachers. Who would want otherwise?

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