LITERACY THEORY AND RESEARCH: ANALYSES FROM MULTIPLE PARADIGMS

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THE MYTH OF TEACHING[1]

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The story is told about a famous astronomer giving a lecture to a crowded hall of students and parents over such basic concepts as the rotation of the earth, the orbiting of the planets, the place of the solar system in our galaxy, and so on. At the end of the talk, an elderly woman in the back of the room stood and shouted: "All of what you say is rubbish. Everyone knows that the earth is flat and is being held up on the back of a giant turtle." The scientist paused briefly and then responded, "Well, if that is the case madam, then what is the giant turtle standing on?" The woman shot back, "Very cute, but sorry, sonny, it's turtles all the way down!"

As in this anecdote, as in the world at large, myth and science are typically portrayed as antethetical to one another. Science is truth; myth is falsehood. Science is serious; myth is humorous. Such a portrayal is misleading. Science is the way in which the verifiable knowledge of the world is represented by mankind. Scientific knowledge is advanced through the kind of systematic inquiry that we refer to as research. Myth, in contrast, is the way in which mankind has attempted to explain and understand that which is not readily verified. Although scientific knowledge has advanced enormously over the millenia, it has barely begun to address, let alone answer, the questions that give birth to myth.

Many find the myths of ancient cultures as trivial, or as revealing of ignorance, but this is because myths are locked, in terms of expression, in the science of that day, not because they reveal anything less than fundamental human wondering. Many think of myth as only something of the past, not of the present. Not so. Myth is as alive and important today as it has ever been. As humans we continue to struggle to understand our cosmos, our origins, our purpose, and our transcendency. Within each of us lives a personal mythology that is constructed in a fashion compatible with our scientific knowledge. Our personal myths govern our interactions with the world; our shared myths govern our social institutions from family, to state, to church, and all of these find expression as we communicate with one another through language and the arts. Within this mythology, we find the assumptions, values, and beliefs that are the powerful, driving forces in everyday living.

The roots of teaching are to be found more in mythology than in science. The evolution of teaching from labor to a professional status has come as a result of shifts in societal values, changing perceptions of schooling, and an expanded economic

[1]Presidential Address, The National Reading Conference, Wednesday, November 29, 1989.

Barnes, & Paulisson, 1986). Indeed, the typical pattern is for teachers to "top out" on such assessments.

To assert that these instruments have not achieved their intended purpose is not to say that they have not had an effect on teaching. Clearly, they have. To characterize this effect, I would like to diverge for a moment to describe very briefly and in very simple terms some notions regarding teaching and learning that draw heavily on the work of Walter Doyle, Thomas Green, and some of my own studies of classroom practices.

Doyle (1983) has proposed that perhaps a more powerful way to examine teaching and learning in classrooms than the process-product tradition is to be achieved by focusing not on what the teacher is doing or saying, but rather on what the students are doing and saying and, by inference, thinking. He describes the "academic work" that students are engaged in in terms of a task model. From the student's perspective, the classroom is seen as a place where work is to be completed and products generated for some kind of evaluation by the teacher. The kinds of products generated may range in scope from a simple worksheet on the letter B completed in the first grade to a complex literary response assignment in a senior level honors English course.

We can think of these tasks in terms of many dimensions. Two of the most important are risk and ambiguity. Risk refers to the likelihood that a task can be accomplished successfully by students. The basic measure of risk is how well the students might do on a particular task if they were given no instruction at all. Completing a page of problems in mathematics that involves some previously learned algorithm would be a low-risk task since the students could likely succeed on their own.

Ambiguity refers to the clarity of the task in terms of the product to be generated. Completion of the problems on a mathematics practice page is low in ambiguity characteristics. It is quite easy for the teacher to express, and for the students to understand, just what is expected. In contrast, consider the example of a Junior-level teacher trying to teach students how to compose a persuasive essay. Here, there is greater inherent ambiguity in the task because the teacher may have some difficulty in describing precisely what constitutes a high quality persuasive essay. In turn, it may be difficult for the students to understand clearly what the teacher's expectations are.

Ambiguity and risk, as task characteristics, can operate independently of one another. One can, for example, increase the risk characteristics of a task without affecting ambiguity. A teacher might be interested in developing a student's automaticity in decoding through repeated practice with a story. The teacher requires that a particular section of the text be read at a minimum rate before allowing the student to move one. The teacher has increased the risk in terms of the likelihood of success but is still dealing with an unambiguous task.

Although the dimensions of risk and ambiguity may have some independence from one another, they are not independent of the kinds of learning one might be interested in fostering. To illustrate this point, consider a model with risk identified on one axis and ambiguity on the other as a heuristic for considering task to learning relationships (see Figure 1). The model is divided into four quadrants and there is a diagonal line radiating out from the origin at a 45 degree angle with a positive slope.

The diagonal line represents a continuum of learning distinguished by the amount

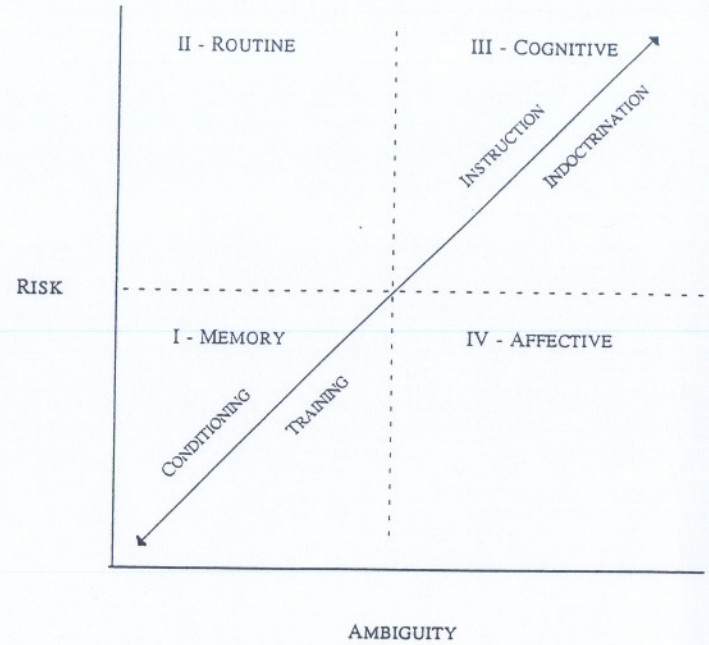

Figure 1. A heuristic model for considering teaching-learning-task relationships.

of cognitive activity required on the part of the student. The continuum ranges from the simple, stimulus-response type learning to the level of critical thinking that involves the application of both concepts and values. Several types of "teaching" are also represented on the diagonal that are associated with the various levels of cognitive activity. Conditioning is a type of teaching one associates with stimulus-response learning. Training is a type of teaching associated with the chaining of stimulus-response type learning into complex performance algorithms. Instruction is a type of teaching associated with concept development, and indoctrination a type of teaching associated with the development of critical reasoning (Green, 1971).

Now consider the four quadrants in the model. In quadrant I, (low risk, low ambiguity), you find memory level type tasks that require only rote level learning such as a student being required to learn some sound to symbol correspondences in a phonics exercise. In quadrant II, (high risk, low ambiguity), you find routine level type tasks such as the one described earlier designed to foster greater automaticity in decoding skills. In quadrant III, (high risk and high ambiguity), you find higher order cognitive level tasks requiring the development and application of new concepts such as the task of composing a persuasive essay. And finally, in quadrant IV, (low risk and high ambiguity), you find tasks that foster appreciation and the development of values. Here, for example, you might consider the task of a teacher reading aloud to students from good literature while encouraging divergent responses from the students.

Applying this framework to the study of teaching and learning in classrooms might involve examining the nature of the tasks presented to students in terms of the risk and ambiguity characteristics. What kinds of tasks does the teacher select? How

are these tasks introduced to students? What is the teacher's role in supporting task completion? What kinds of "in flight" decisions does the teacher make to adjust the task during instruction? What meanings do the students construct around this task? What kinds of learning are associated with participation in these tasks?

One of the interesting findings from task research relates to the dynamic interaction between teachers and students during instruction. It has been discovered that students, in general, tend to resist tasks that are high in ambiguity and risk. The introduction of such tasks into a classroom immediately sets into motion a process of negotiation between the teacher and the students. Students will work to reduce the ambiguity and risk features. For example, the teacher introduces the task of writing a persuasive essay. She tells the students that in 2 weeks they will be required to turn in a completed product. That essay will be graded and count for 40% of their term grade. She assures the students that she will teach them during this 2-week period how to write a good essay. It is here that the negotiations begin. For example, the students might ask for specific parameters for the task. How many pages? They might ask the teacher to provide them with a model of an excellent paper. They might ask for a chance to turn in a first draft for feedback that they can revise before the final submission. In each case, the students are attempting to reduce the ambiguity of the task. The teacher may resist these attempts to negotiate for fear of reducing the potential for learning. The teacher understands that to hand out models might lead to mimicking which is a low level memory type learning outcome.

It is truly a negotiated process. The teacher is not simply free to hold the standards as high as she might like without some encountering some risks. The students always have their trump card to play in the negotiations, and that is cooperation. The teaching-learning contract is based on principles of trust and cooperation. Pushed too far, students may become uncooperative and teaching stops and learning stops. The work system disintegrates.

If the teacher has the goal of a smooth running class in the sense of minimum disruptions and "noise" in the system, then several options are open to him. The first is to readily negotiate with students by reducing the ambiguity and risk characteristics of tasks to a rote memory level. The other option is to simply avoid the teaching of difficult content altogether. Here we find the teacher who, for example, skips the unit on electricity because it is too complicated for his students and substitutes instead a unit on the water cycle. Or, the teacher who moves a pupil from one reader down to another because the vocabulary and concept load are too challenging.

The choices are fairly clear. On the one hand, the teacher who wishes to challenge students intellectually, to push the frontiers of learning, must be willing to tolerate some uncertainty in management and order in the classroom. Higher level learning requires action and interaction. Some students may resist initially. The teacher must be skilled in motivating and instructing and not succumb to the pressure to abandon higher level thinking goals. On the other hand, the teacher who is primarily concerned with the conditions of order and cooperation in the classroom may find the easy road is filling the classroom day with tasks low in ambiguity and risk, thus reducing the opportunity to learn—the expectation to learn.

The first example is consistent with a professional myth of teaching—the belief that a good teacher is one who holds incredibly high learning standards and is knowledgeable, skilled, flexible, and creative in helping all children, including the unmotivated and "at-risk" learners, to realize these goals. The second example of the classroom filled with trivial content probably comes closest to what the science of teaching (as revealed through process-product research) has identified as "effective."

Teachers subjected to evaluation derived from the process-product tradition learn one simple lesson from the appraisal process: The easiest way to score well on an appraisal is to teach only content that is at memory level. With the associated low risk and low ambiguity task characteristics, good management is practically assured. Further, this content is both easily molded into seven step formula teaching (i.e., training) and readily measured in terms of learning outcomes.

Although some teachers claim to have "canned" lessons to pull out at a moment's notice for an unscheduled observation and that they return to real teaching after the observation is over, the fact is these kinds of appraisal instruments have created a norm in many states for what effective teaching looks like.

What kind of mythology of teaching is compatible with this scientific view? It is surely one that minimizes teaching to a technical skill—not even a craft—and certainly is not a professional view that emphasizes responsible decision-making.

The research in teaching and accountability movement is just one example of where research findings are being used in a way that intrudes on the lives of teachers and students. Consider a second area: prescriptions for practice derived from the "effective schools" movement.

Paralleling, but distinct from, the development of the research in teaching literature during the decade of the seventies, one finds the growth of the "school effectiveness" literature. Beginning with the work of Weber (1971) and followed along by many others, researchers began to identify schools that were succeeding with students in terms of academic achievement where other factors (e.g., socioeconomic status) would overwhelmingly predict failure. Out of this work, the correlates of effective schools have been identified. Like the effective teaching correlates, there are any number of lists of school level factors that are associated with success. There is wide agreement in this research community on the importance of such factors as clear mission, instructional focus (with an emphasis on basics), the principal as instructional leader, and frequent assessment of student learning (Hoffman & Rutherford, 1984).

There are any number of staff development programs under way in school districts and in states across the country that draw on this research base. Let me examine just a couple of these areas with you to explore the effects on teaching. We begin with the notion of "instructional focus." This is translated operationally to mean that all teachers should be teaching the same thing at the same time. At the campus level we find principals, in their role as instructional leaders, requiring teachers to move through the same required curriculum materials at exactly the same pace. At the state level we find similar efforts. In Texas, for example, the state has attempted to achieve instructional focus by identifying a set of essential elements. These essential elements serve to define, at a minimum, what must be taught by every teacher to every child in every grade level in every major curricular area. The state has implemented an annual minimum skills testing program that is tied directly to the learning areas targeted in the essential elements. All of the state's requests for instructional materials are tied to the essential elements and the associated assessment instruments. The

publishers have responded in the designing of their materials, not just for Texas, but for the world at large.

And what are the effects of promoting this conception of instructional focus? We have created a trivial curriculum around easily measured learning outcomes and once again intruded on the teacher's prerogatives and responsibilities related to instructional decision-making—the hallmark of the professional teaching myth.

I have a friend who is a classroom teacher (kindergarten level) who has been immersed for the past 2 years in one version of effective schools training. She related to me a recent inservice activity in which all of the teachers in her school were placed in small groups to consider and discuss solutions to particular problems. On this day, all of the problems related to instructional focus. One of the cases depicted a first-grade teacher working in a school located in a very poor community. Each year this teacher would spend 3 weeks in the spring teaching a poetry unit that she had developed. It was her belief that all children needed to be exposed at an early age to the beautiful language and expression one finds in poetry. She felt it particularly necessary to teach this unit in this setting because the children in her class were not often exposed to rich models of language. One day the principal visited her classroom for an observation and found her teaching this unit. In a follow-up meeting with the teacher that afternoon, he suggested that the teacher's time and the students' time would be better spent on the basics and that she should abandon her work with the unit.

The question for discussion in the group was: What should the teacher do? My friend did an excellent job of convincing her small group that the teacher should stick to the unit and instruct the principal on how the "basics" (and much more) can be taught through poetry. When the groups came back together to share their solutions, my friend's group was the only one recommending that the teacher stick to the unit. The other groups all concluded that the teacher should drop the unit and teach the basics in order to achieve an instructional focus consistent with that of the entire school.

The principal, who was directing the inservice and following the programmed materials for establishing an effective school, affirmed the position of dropping the unit. She cut short the discussion of the merits of the alternatives with the statement: "It's not important whether you believe the effective schools' principles. All that's important is that you do it."

What kind of teaching myth can survive the fury and folly of instructional focus when that is translated to mean sameness? Woe to those who venture out of quadrant I on the model! I fear the lines surrounding quadrant I are quickly becoming the boundaries for schooling.

Although the examples of research intruding on the lives of teachers I have discussed are few in number, their presence is so overpowering that I am amazed when I walk into classrooms and find exciting, creative teaching going on. It is a testimony to the commitment of classroom teachers in Texas that the myth that led them to teach survives the onslaught of educational "reform."

Although the examples I have reflected on are focused on the geographical area that I have continual interaction with, I know the rest of the country is not immune. In preparing for this essay, I wrote to several colleagues across the country soliciting

examples from their experience where they found the findings of research being applied in an intrusive way. The return rate on my "not-so-scientific" questionnaire was over 95% and there was no shortage of examples. The labels often differed from one area to another, but their responses suggested to me that the underlying mentality and movements are the same across the country.[2]

Although the examples I have given relate to areas that I have some research experience in, there are other areas of activity that are equally important that I could draw on such as the recent legislation in this state that requires all first-grade students to be assessed for dyslexia and those found to have it to be treated with a "proven" program of remediation.

And finally, although the examples I have reflected on represent, in my estimation, misapplications of research findings by policy makers, there are numerous other examples of intrusions into the lives of teachers in the name of research that have a questionable research base, as in the case of the learning styles movement and the left-brain/right-brain literature.

What responsibilities fall on us as literacy researchers deal with these abuses?

We can ignore the situation altogether—dig our heads in the sand, or worse yet, build walls around universities only venturing out into the real world to gather some data now and again. We can proclaim science as innocent, value free. We can claim that some of our best friends are teachers, forgetting that for every teacher we know there are thousands more who know us and our work only through our interpreters. The problem with the "I'm innocent, I'm a scientist" approach is that the suffering is too severe to be ignored. The abuses are too rooted in the system to go away if we ignore them. The problem is that we are part of the problem and, therefore, must be part of the solution.

We can begin by becoming proactive as individuals in policy and programmatic initiatives to try to make things better. There are those among us, for example, who have become actively involved in trying to improve State Assessment and National Assessment processes. There are those among us who have become directly involved in the development of programs (commercial and noncommercial) that build on current research. There are those who have become active in the whole language movement, a movement sweeping the country because it has a solid basis in theory and because it stresses teacher empowerment, the power of myth. Individuals who make these efforts do so at some risk to their status in the research community. Surely there are philosophical and ethical issues involved here, but I trust we can find resolution to these concerns in a way that does not separate researchers from practitioners but builds bridges. I applaud all of these efforts, even though I might not be comfortable personally with some of the outcomes. I believe the more involved researchers are in the world of practice, the more we will insure that practice and science are in tune with one another. Acting out individually can make a difference, but it is not enough.

We can take steps in our own research to adopt methods or combinations of

[2]I would like to extend my appreciation to the following individuals for sharing with me their insights on such issues: Richard Allington, Donna Alvermann, Kathryn Au, Robert Calfee, Diane DeFord, Jan Dole, Walter Doyle, Gerald Duffy, James Flood, Larry Friedman, Yetta Goodman, Jerome Harste, Elfrieda Hiebert, Peter Johnston, Michael Kamil, P. David Pearson, Virginia Richardson, Robert Ruddell, Patrick Shannon, Steven Stahl, and Paul Wilson.

methods that explore the personal constructs of teachers about teaching, as well as the personal meanings that students construct as part of learning (see Erickson, 1986). The academic work model, described earlier, represents one view of classrooms that is compatible with both interpretive and quantitative research traditions. Through such research we can come closer to capturing teacher intuitions and perhaps begin to understand how teachers grow conceptually and professionally. The findings regarding excellence in teaching that come out of such research efforts will enrich our scientific knowledge. Further, these findings may be less seductive to policy makers looking for quick fixes and, therefore, less vulnerable to the kinds of abuses associated with process-product research.

Adapting our research methods is something that can help in the long run, but this is not a sufficient response in that it does little to address the current problems we face.

We can speak out as individuals against the abuses surrounding us. Jere Brophy (1988), one of the leaders in the process-product tradition, writes:

> Research on teaching and research on teacher effects in particular, has a great deal to offer by contributing to the development of a knowledge base to inform professional practice. However, it is a misuse of such research to use it as a basis for developing simple-minded and rigid guidelines of the "behavior X correlates with the student achievement gain, so teachers should always use behavior X variety." (p. 20)

Surely, we must speak out as individuals. But it is not always clear that a single voice, however renowned, will be heard above the noise of a stampede. Speaking out as an individual is not enough.

We can assume a voice as a total research community and in unison "just say no" to the absurdities that surround us. This is, in fact, what I believe we must do if we are to break out of the horrible cycle we have become locked into.

Where might we find such a collective "voice"?

I do not believe that the NRC is the appropriate platform. The NRC has a singular focus and that has been and should continue to be as a forum for sharing original research. The NRC is dedicated to the advancement of a science of literacy through research. It is the goal of science that binds us together. This is not to say that we always agree with one another. Anyone who has spent time at NRC in sessions or eavesdropping in "vital issues", recognizes the tremendous diversity in our membership. Our diversity is rooted in the fact that we do not always share the same mythology. And that is as it should be. It is perhaps the differences in our mythology that make us interesting, amusing, challenging, motivating, and even aggravating to one another. Occasionally we fall victim to the temptation of trying to use research to prove our particular mythology to be better than someone else's. But we recognize this cannnot ever be done and come back together year after year to share research. I would not want to threaten this focus or this diversity by asking the NRC to assume a new role.

I do believe, though, that it is perfectly appropriate for the NRC to assume a leadership role in encouraging action by the literacy research community. I am asking that the NRC consider sponsoring a meeting of the leadership of such organizations as the National Council of Research in English, The American Educational Research

Association, The National Council of Teachers of English, and the International Reading Association. The purpose of such a meeting would be to explore possible ways in which we, as a profession, might be able to monitor the application, misapplication, and ignorance of literacy research in policy and commercial initiative.[3]

It has been observed that for every complex problem there is a simple solution—and it is usually wrong. What I am proposing is neither simple nor is it the solution to all of the problems facing teaching today. It is simply a starting point. I believe such an effort can make a difference in the long run. The people fostering the kinds of abuses I have cited are well-intentioned individuals, but typically misinformed or uninformed, not just about research findings but about what research is and what can be expected from it. We can challenge the popular perception that good teaching can be mandated through policy initiatives whether those initiatives come from the central office in a local school, the central office in a district, or the state agency for education. We can, perhaps, begin to turn the tide toward a return to a trusting, empowering view of individual teachers. I am not, by the way, waxing nostalgic for the good old days of the 1950s. Myth without science is ignorance. We must continue to work to create a science of literacy learning and teaching, but that science in the hands of teachers must live with and take life from myth. A single science, perhaps, but not a single myth. The diversity that makes us interesting to one another as researchers is the stuff of which exciting teaching and schools are made.

Several years ago I attended a reception honoring 10 outstanding classroom teachers. Each teacher was given a few minutes to describe what brought them to and sustained them in teaching. One after another they related moving testimony to their personal commitments to help, to serve, to enrich the lives of children. The final honoree began by saying that she felt a bit guilty listening to all of the other winners. She confessed selfishness as her prime motivator. She described herself as addicted to learning and that teaching was the only place she could find to satisfy her habit. That 'confession' and the comments of the other teachers reminded me of the power of myth in professional life. It reminded me, too, of the words of Joseph Campbell (1988) when he wrote:

> People say that we're all seeking meaning in life. I don't think that's what we're really seeking. I think what we're seeking is the experience of being alive, so alive that our life experiences on the purely physical plane will have resonances with our own innermost being and reality, so that we actually feel the rapture of being alive. That's what it's all about, and myths are the clues to the spiritual potentialities of the human life. (p. 5)

Can we create a science of teaching literacy that supports the experiencing of a personal mythology in teaching? Can we bring about a renaissance of the art of teaching which is nothing more or less than the creative unleashing and expression of a personal mythology? Can we demonstrate to teachers that science is their ally and not their enemy? Can we be as tolerant in our acceptance, indeed encouragement, of multiple myths of teaching as we are in learning to accept and encourage multiple myths of research? I believe we can and we must do all of these. It is our professional obligation.

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[3]On December 3, 1990, the NRC Board of Directors approved a motion to sponsor such a meeting.

In the end, it may not be turtles all the way down, but as Gerry Duffy (1982) once noted, it may seem at times to teachers that their feet are surrounded by alligators. At such times myth is not a luxury but a necessity to persevere and perhaps even excel.

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