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The Paradigm Behind the Curtain: Comments on Papers by Tom Carroll, Gerald Bracey, and John Bransford, Xiaodong Lin, and Dan Schwartz

Jerry Willis

Iowa State University

We despise all reverences and all objects of reverence which are outside the pale of our list of sacred things. And yet, with strange inconsistency, we are shocked when other people despise and defile the things which are holy to us.

Mark Twain in *Following the Equator*

Accept a paper that deals with a significant issue and begin a conversation about it by asking reviewers to comment on it. Publish the paper and the responses in the same issue of the journal and invite readers to join the conversation. Sounds good! But will the theory work in practice?

If the responses by Bracey and Bransford, Lin, and Schwartz are any indication, we have made an excellent choice. Carroll's paper is a thoughtful exploration of a simple thesis—schools will not improve if we add technology and do not change the nature of both schools and schooling. He packages that message in an extended essay that uses metaphors and examples to reinforce his basic points. And he offers some suggestions about how to get from where we are to where we would like to be. Carroll does not, however, give us a recipe for traveling to the future, nor does he give us a specific destination for our travel. I find that a strength rather than a weakness, but it does leave him open to some criticisms

Carroll's paper is considerably enhanced by the comments of Bracey and Bransford, Lin, and Schwartz. We have a better understanding of the original paper, as well as the strengths and weaknesses of the arguments in that paper when we read the two commentaries. Both are thought provoking, inspiring me to make some comments about both Tom Carroll's paper and the accompanying commentaries.

Bracey's Views

Gerald Bracey's contributions are important; in order to have a dialog, different perspectives are required. Bracey is not a technophobe or antitechnology *per se*, but he brings a skeptical perspective to the conversation.

Bracey finds the analogy between hospitals and schools to be a "tired" one, and it is true that this is a frequently invoked analogy. Elements of this comparison may nonetheless have merit. Bracey seems to be talking about two different aspects of schooling: the teaching/learning

process, and discipline. In terms of the teaching/learning environment, I think Bracey is both correct and incorrect about schools having changed. In virtually every section of the country, there are "islands of excellence"—schools where kids do the things Bracey mentions—publish writing, engage in lots of hands-on activities, and relate what is happening in the school to the child's world outside the classroom. However, I think Bracey is wrong if he is saying that this is typical or even commonplace.

Pick ten schools at random in virtually any part of the country, then pick a classroom in each school at random. If you could be a fly on the wall for a day I think you would not find much of the interesting and innovative things Bracey mentions. It simply is not happening in most classrooms today in America. There are far fewer differences between a 1900 classroom and a 2000 classroom than between a 1900 hospital and a year 2000 hospital.

Concerning discipline, I wonder if Bracey misses the point about order in schools when he says that putting a "nice Edwardian lady" in a classroom would lead to "chaos within five minutes, I bet." Since Edwardian implies English schools and teachers (or at least European), I think the reverse would probably be true. The typical Edwardian teacher (who was male, not female) would establish order in the classroom very quickly, but at quite a cost. Consider what Welsh (1978) had to say about discipline in schools over the past few thousand years:

Lloyd DeMause (1974) wrote, "The history of childhood is a nightmare from which we have just begun to awaken" (p. 1). In ancient Greece, the schoolmaster used the birch rod as a means of correction. Homer was flogged, as was Horace, (Scott, 1938, p. 95) and John Milton's wife complained that she hated the cries of his nephews as he beat them. Beethoven whipped his pupils with a knitting needle, and Louis XIII was whipped upon awakening for the previous day's transgressions (DeMause, 1975).

The practice of whipping children in the home and at school is frequently justified by Solomon's dicta: He that spareth the rod, hateth his son; but he that loves him, chastises him betimes. and Withhold not correction from the child; for thou beatest him with the rod, he shall not die.

The latter, unfortunately, is not always true, as those of us who work with child-abusing parents know. Western schools, particularly those of the nineteenth century, have a history of remarkable brutality. One nineteenth-century German school master estimated that he had given 911,527 strokes with a stick, 124,000 lashes with a whip, 136,715 slaps with the hand, and 1,115,800 boxes on the ears (DeMause, 1974, p. 41) The situation was not much better in England.

At Eton, where the whippings were usually severe, each boy's bill included a half-guinea charge for birch, whether the boy was flogged or not (Scott, 1938, p. 100). The last attempt to ban corporal punishment in the English schools was in 1972, during the Conservative government, but it went nowhere (Coffey, 1976).

The student's lot was not measurably happier in the United States and its territories. The New England Primer echoed the English tradition of school floggings:

F The Idle Fool Is Whipt at school

J Job feels the Rod Yet blesses GOD

The "settled tradition" discussed in the infamous 1975 school spanking ruling by the Supreme Court is well documented in children's literature. Laura Ingalls Wilder (1937), author of the *Little House on the Prairie* series, tells us what it was like in the Dakota Territorial schools in the late 1800s:

Laura did not know until later that the ruler was to punish anyone who fidgeted or whispered in school. Anyone who was so naughty had to walk up to Teacher's desk and hold out her hand while Teacher slapped it many times, hard, with the ruler (p. 151).

Because discipline was harsh in Edwardian schools I think an Edwardian teacher would probably establish a quiet and obedient classroom rather quickly. In the process, however, he would create a classroom environment where very little meaningful learning would occur. Most of us would agree that patterns of discipline have, indeed, changed, and for the better. Students, for the most part, are no longer subjected to forms of child abuse in most American schools today that were commonplace 100 years ago.

Bracey also suggests that Carroll is really an Ivan Illich clone "*sans* ideology and *avec* technology." To the extent that both argue that we must change the nature of schooling in America, that is true. But suggesting that Illich has an ideology while Carroll does not, and that Carroll is a technology advocate while Illich is not is an inaccurate characterization. Actually, Illich takes strong positions on technology. Daniel Chandler (1999) noted in a paper titled *Technological or Media Determinism*, "Major critics of the pursuit of the technological imperative have been Jacques Ellul and Ivan Illich." Yet that is not quite correct either. In his book, *Deschooling Society*, Illich (1970) commented that people

should be able to meet around a problem chosen and defined by their own initiative. Creative, exploratory learning requires peers currently puzzled about the same terms or problems.... The most radical alternative to school would be a network or service which gave each man the same opportunity to share his current concern with others motivated by the same concern. (p. 19)

Illich is strongly opposed to technology that supports the traditional school and to technology that supports some alternatives to traditional schools. However, he supports technology that facilitates and encourages his vision of what learning should be. Thus, in comparing Carroll and Illich, we should at least say that both are "*avec* technology" but only technology that supports their somewhat different visions of what teaching and learning are.

Is the difference then, as Bracey suggests, that Carroll is *sans* ideology while Illich bases his work on an articulated ideology? I think it would be more accurate to suggest that both authors come from a strong ideological position. Illich works from a critical theory or neomarxist position, while Carroll is solidly within the constructivist or interpretivist tradition. These two traditions have in common an opposition to the traditional foundation for education: behaviorism or positivism. Seymour Papert, one of the better-known constructivists in educational technology, made that clear in a 1990 paper:

Ivan Illich said the most important thing you learn at school is that learning only happens by being taught. This is the opposite of empowerment. What you ought to be learning at school is that you don't need to be taught in order to learn. This is not to say that the teacher is not an important part of the learning process. That teacher is, of course, the most important person there. But recognizing the importance of the teacher is very different from reducing learning to the passive side of being taught. This is the fundamental cleavage between theories of education: empowerment of the individual versus instruction and being taught.

In the past, I have inveighed against the phrase computer-aided instruction. One can criticize it from many angles. Right now, I only want to mention it as a symptom of a way of thinking. The fact that this phrase should have been so easily accepted by the world of specialists in computers in education shows that the emphasis in their minds is on the

computer as an instructional device. This is one side of education, but the smallest and least important one. If we devote the computer only to that side, we will be wasting it. It can do much more.

Illich, the critical theorist, and Papert, the constructivist, agree that today's schools are not what we need. However, they, and other representatives of these two paradigms, can differ significantly in the alternatives they offer to traditional education. Illich's learning webs, for example, are an expression of a basic drive toward emancipation and freedom, which is at the core of critical theory. Carroll's networked learning communities are an expression of a basic tenet in social constructivism that knowledge and understanding are built in groups by involved and invested individuals. Many of Bracey's comments are based on critical theory, but I think he might acknowledge that Carroll is not working from within that paradigm. For example, critical theorists are concerned about who decides what, and they are suspicious of any teaching/learning context in which decisions are made by teachers or administrators. Constructivists, on the other hand, accept that some decisions will be made by teachers, administrators, parents, society, and so on, but they argue that students must participate in the decision making process, and in some (but not all) instances, make all or almost all of the decisions about what to learn and how to learn it.

Rather than "*sans* ideology and *avec* technology," the difference between Carroll and Illich is (a) critical versus interpretivist ideology and (b) a shared opposition to technology that supports the status-quo, along with support for technology that supports the author's preferred ideology.

Finally, Bracey's application of critical theory to the current situation in education requires a broader context. He concludes, "Computers are a `white thing,'" but I think that in the broader context it is a "developed country thing." Ukraine and Poland have little in common with China and North Korea in terms of ethnic background, but they are all less developed than most Western democracies and have a limited base of personal computer users. On the other hand, Japan and England do not share similar ethnic backgrounds but they are both developed nations, and they have a much higher level of personal computer usage.

Bransford, Lin, and Schwartz's Commentary

Though Bransford, Lin, and Schwartz's comments are much longer and more detailed than those of Bracey, my response to them will be much briefer. Why? Because Bransford is one of the founders of a constructivist way of thinking about teaching and learning, and that is the paradigm within which I work. Whereas I commented on Bracey's article from the perspective of a neighbor who lives in the same village, Bransford, Lin, and Schwartz's perspective is more like a relative who shares many familial characteristics. Even Bransford, Lin, and Schwartz's approach to framing the issues are familiar and comforting. "Researchers in this area note that, whenever we attempt to solve some problem...we invariably make a number of assumptions that may or may not be conscious." Those assumptions are often taken from the particular worldview or paradigm we work from, and today the three most popular paradigms in educational technology are postpositivism (represented by behaviorism, information processing theory, and cognitive science), interpretivism (represented by cognitive constructivism and social constructivism), and critical theory (represented by critical theories of education).

Bransford, Lin, and Schwartz, like Carroll, use a number of metaphors to illustrate his points, which is another characteristic of interpretivist and constructivist writing. Metaphors carry meaning in ways that factual writing cannot, and they therefore add considerable richness to the meaning. Bransford, Lin, and Schwartz and Carroll also use examples extensively. Carroll's are

generally organizational examples illustrating general ideas, but many of Bransford, Lin, and Schwartz's are from personal experience, which through the particulars help us see the general points. (Bransford's use of a weekly e-mailed journal in a college course is something I intend to try this Fall in a course of mine where journals have not worked as well as I had hoped.)

On the other hand, I sometimes felt I was seeing Europe in 2 days while reading Bransford, Lin, and Schwartz's comments. A colleague of mine tells a story about me giving her a tour of the area of Tennessee where I grew up. As she tells it, I ran out of daylight and continued to point out landmarks in the dark with comments like, "If it were during the daytime, you could see such and such right over there." Bransford, Lin, and Schwartz make some critical points about tacit knowledge, tacit assumptions, the process of problem solving, alternative problem definition, virtual spaces, adaptive expertise, and many more, but he sometimes depends on the examples and metaphors to carry the meaning. I am old fashioned enough to want a bit more explanation about what these terms mean to Bransford, but that is because I think they are crucial concepts that are often overlooked when we think about both teacher education and K-12 education.

For example, the ideas of distributed expertise and adaptive expertise are at the heart of the constructivist conception of what a desirable learning environment should be. They carry with them many implications for how a teacher operates in that environment, as well as implications for the many roles a student can play. I would have liked to see a bit more about the implications of this concept for teacher education, but perhaps that is for another paper.

Something that Bransford, Lin, and Schwartz hint at, as does Carroll, is that new ways of teaching and learning do not spring forth, fully formed and functional, from the mind of a teacher or student who has just met them in an article or a class they are taking. Learning—and teaching—in new ways is difficult, and we have a great deal of work to do before we have much confidence in our ability to help preservice teachers become strong professionals who can foster and support the types of learning that Bracey, Carroll, and Bransford talk about. This is, perhaps, the weakest link in the chain that starts with an idea for reform and ends with a new era school. I want to know more, for example, about how challenges could be used in teacher education. Bransford gives some brief examples but I want more. What would the challenges look like? How would we change the teacher education curriculum to provide learning space for them? Would preservice students be more likely to use these forms of teaching/learning when they graduate if part of their teacher education curriculum used them? If so, how do we prepare teacher education professors to want to use these approaches and to develop the expertise they need? That said, however, I think Bransford's paper is a step toward helping us think about how to implement many of the excellent ideas in Tom Carroll's paper. It is a challenge that is well worth taking on.

In Summary

Carroll's paper is a thoughtful reflection on where we are and where we could go in teacher education. It is based on modern (or should I say postmodern?) constructivist theory. He lays out a general framework and the conceptual scaffolding needed to begin and continue reform efforts. Bracey's critique is a well-considered analysis from a critical perspective that points out some significant issues that look quite different from the critical worldview. Bransford, Lin, and Schwartz's analysis is less a critique and more a companion piece that adjusts the camera's zoom lens to shift from Carroll's wide angle perspective at a distance to a midrange shot of the same landscape. We need more of what is represented in all three of these papers. I would also add that we also need close-ups—detailed work that shows us how it could be done, is being done, and

has been done.

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