

## ***Teachers as Agents of Change: Preparing for Global Citizenship***

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### **TAKING SOCRATES TO TASK: QUANTUM LEARNING THROUGH DIALOGUE**

#### **INTRODUCTION**

The title of this education conference *Teachers as Agents of Change: Preparing for Global Citizenship* is significant. Danah Zohar, physicist, philosopher and quantum thinker, offers all of us a cogent challenge as we talk of ourselves as agents of change: "Most transformation programs satisfy themselves with shifting the same old furniture about in the same old room. But real transformation requires that we redesign the room itself. Perhaps even blow up the old room. It requires that we change the thinking behind our thinking..." (Zohar, 1997 p.13)

My contribution to this challenge is to invite a look at Socrates' perception of dialogue and challenge him. Harold Tarrant in *The Last Days of Socrates (1993)* describes Socrates in action, in conversation. There are two forms for these conversations: i. the *elenchus* where Socrates proceeds to expose inconsistencies in the beliefs of the man he is conversing with (educating). ii. The *dialectic* is his attempt not to expose the false beliefs of others so much as giving thoroughly argued justification of his own deep-rooted beliefs. In both of these forms, the center stage belongs to Socrates. He manipulates, manages, refutes, directs. He has the first and the last word. As Tarrant says: "Socrates' limited claims to wisdom might have been appreciated more had he not at the same time been suggesting a powerful ignorance among the rest of mankind. (1993, p.35)

No, this is not the dia-logos I speak of in my work, nor the dialogue we design for when composing learning tasks. Knowing Paulo Freire and David Bohm as I do, I suggest that they too are looking at dialogue as a much more quantum phenomenon. The energy of an idea or concepts is tested, articulated, clarified, applied, questioned, integrated by interaction among learners, not by an "elenchus" or even a "dialectic" posed by an all-knowing teacher. When learners engage with new ideas, skills, and behaviors they develop their own positions, which they must test in community. The role of the "professor" is radically changed in dialogue education. She is now a competent student of a discipline, setter of learning tasks in sequence, resource person to learners as they do these tasks, evaluator of the completion and comprehensiveness of the products of these learning tasks. Sounds like Fielding, doesn't it?

Professors often tell me: "Look I have so much material to cover. I simply must lecture! I use PowerPoint, so I know students are engaged!" I respond: Remember, the lecture was born of the sermon. This was used in medieval churches and was necessary because at that time, only the priests could read. Today, my friends, all of our students are ordained to learning. Assume your learners can and will read. Find the appropriate ways to dialogue with them so that they learn. Fielding has been searching for ways to do this for years.

To "change the thinking behind the thinking" we can take the word of a twenty-first century philosopher, Simon Blackburn, who says "How we think about what we do determines how we do it, or whether we do it or not." (Blackburn 1999, p. 7)

This paper challenges you to consider how you think about learning, not teaching. In fact, I have proposed that we all take a ten-year sabbatical from teaching, and concentrate for a decade on learning in all that we do. In ten years, we can go back to teaching, somewhat cleansed, I trust.

### **LEARNING-CENTERED DESIGN**

Sarah Gravett and Elizabeth Henning speak to the difference between learner-centered, teacher-centered and *learning centered* design in their study: *Teaching as Dialogic Mediation* (1998). Their paper "addresses an epistemological view of teaching, premised on the concept of dialogue, informed by a Bakhtinian view of communication. Based on Bakhtin's theory which implies teacher, learner and knowledge in a dynamic reciprocal unity, dialogic teaching is proposed as transformative exchange, where teachers and learners are involved in a co-learning and co-teaching process, thereby cultivating the development of an authentic community of learners, characterized by sharing and support, along with cognitive challenge. The crux of dialogic teaching is that the teacher as mediator respectfully listens (in a Bakhtinian sense) to how students apprehend and construe phenomena related to academic themes and then guides them through a process of co-inquiry toward a reflective, scientific understanding."

Socrates, eat your heart out? This is not refutation of another's experience or perception, (elenchus) nor is it presentation of one's own irrefutable position (didactic). We can design and lead learning tasks for small groups to do which perpetuate domination, if we ourselves begin to think differently about learning and teaching. Dialogue is not dialectic. Dialogue is both art and science, where each learner is respected as a scientist, with experience and perception that is valuable to the whole of knowledge.

## **SERIAL THINKING, PARALLEL THINKING, QUANTUM THINKING**

Danah Zohar and her husband, I.N.Marshall (Zohar, 1997) show us how current knowledge of neurological patterns and systems in the brain corroborate the use of dialogue. She describes i. serial thinking which uses the neurons in the brain - one jump from one idea to the next. The electrical charge is exciting and rewarding. *What is the capital of North Carolina? Raleigh?* Right!

These neurons are arranged in networks, so parallel thinking involves synapses within a network. *What is the connection you see between Raleigh, the capital and the other major cities of the state?* Federal roads (I 85, I 40, major airports, a new train connection). Right!

Quantum thinking involves the network of networks: Look at the map of the state. *What other city could be the capital? How do you see things changing for North Carolina if that city was declared the capital?*

Do you see the quality of dialogue and critical thinking and imaginative projection grow as we move from serial thinking to quantum thinking? This is neither dialectic nor elenchus, neither putting the professor up nor the learner down. This is dialogue learning for all, based on the assumption that all know and all can know, and there is more than enough knowledge to go around. Dialogue assumes abundance!

Recently I spent an enchanted afternoon at the North Carolina Museum of Art where the sculptures of Rodin were being shown. At the display of his famous sculpture THE THINKER, I read a note Rodin had written about it: *Consider how the thinker is thinking with his toes.* Quantum thinking!

## **TWELVE QUANTUM CONCEPTS**

Let's try to think of learning in terms of twelve quantum concepts. I have selected these twelve: energy, the holistic nature of the universe, context, relationship, the chaordic nature of the universe, dialogue, the self-organizing and benign nature of the universe, complementarity (celebrate the opposites!), perception, potential, spontaneity and synchronicity.

In all of my work over the years, I have always been aware of the central place energy holds in the learning process. When in 1905 the atom was split, physicists expected to find more matter. They discovered that the at the heart of the atom lay not more matter but energy. The poet Eliot spoke to this discovery: To arrive where we started. And to know the place for the first time.

## **FOUR QUARTETS**

How can we as teachers and designers of learning events, keep energy up? What makes learning happen at white heat? We know the answer to that from our own experience and from the work of such good folks as Kurt Lewin, Donald Oliver, Maria Montessori and John Dewey. These folks took Socrates to task by teaching that learning occurred when the learner was active, working, questioning, struggling. The transformation at the end of such learning is not only in the learner, but also in the teacher and in the content taught!

The fragmentation of Newtonian physics is replaced in quantum theory with the awareness of the holistic nature of the universe: each particle contains the whole. So, each section of this paper and each learning task in my "presentation" contains the whole. To see our efforts at design as a hologram is to be fully accountable to the learner. From the initial concept paper, through the needs assessment, through the design of learning tasks and materials, through the presentation and feedback and evaluation, all must be coherent. To slight one learner is to disrespect all; to rush the dialogue for one student is to undo the dialogue. Nature is so good at quality control. Context is shown in quantum thinking to determine a specific reality. Zohar puts it this way: "to change the context of an entity is to change the entity itself." When I know the context of learners, I can design better for optimal learning. Needs assessment is a study of context as well as of learning needs and resources. This is why the context of the learning site is so meaningful. When I taught at a state university in North Carolina in the seventies, I told the graduate students that it was impossible for me to teach effectively in the antiseptic, windowless, high-ceilinged, fluorescent-lighted rooms they called classrooms. I took the class to my small livingroom at home. Now I understand why I did so.

All of nature is in relationship and my job as professor or educator is to use that relationship to aid and abet learning. This is not a reflection on individualism and communalism. All of nature is both: a particle and a wave: individual and communal. And all is relationship. Small groups do not enhance learning: they are the place of learning. Separateness and solipsism may prevail as values in our society; however, they are not natural. And the chaotic nature of the universe celebrates chaos that reveals intrinsic order. Often as students work on a learning-centered design, it looks chaotic. The order reveals itself gently but inexorably. Our universe is self-organizing and benign. This gives me confidence in my design and teaching. As I watch students struggle through learning tasks, my urge to "help" is lessened as I remember this quantum concept. They will get it, and they will ask when they need help. My task is to set an appropriate, resource-full learning task and to be there as a resource myself.

Dialogue is the means of communication of quantum thinking. Each learning task is designed for dialogue with open questions that set students to quantum thinking. *Dia - logos*: the word between us. What a challenging thought that is.

Avoiding determinism and either/or thinking keeps the learning potential open. We use the quantum principle of complementarity when we accept both/and thinking. Light cannot be measured as a particle and a wave *at the same time*. All of nature is both/and: particle and wave. Can you see how our attitude can change as we consider these quantum concepts. We do evoke the world as we perceive it. As learners think of themselves not as problem solvers but as potential seekers, learning can flourish. Application of new content and skills is not to solve problems but to unleash potential. The universe is not a problem to be solved. I speak no longer of "problem posing" education but of dialogue education, which can take us places we have not conceived.

As quantum thinkers, we celebrate spontaneity. And we trust in the inevitable moments of synchronicity to bring things together for both learners and teacher. Can you see the connections between chaos and spontaneity, potential and perception, complementarity and dialogue, energy and relationship? I see these twelve quantum concepts as deeply interconnected.

### **DIALOGUE NOT DIALECTIC**

I see that we can be *agents of change: preparing for global citizenship* if we accept the quantum concepts as guides to our perception of learners and of ourselves as learners. We can structure for dialogue by using learning tasks which are open questions put to small groups of learners with all the resources they need to respond. Learning tasks invite quantum thinking. Learning tasks invite the use of the network of networks of neurons in the brain, making learning happen as students create context appropriate theory out of what we as teachers offer. Remember: a learning task is a task for the *learner!*

The domination systems of colonialism, capitalism and communism cannot thrive when quantum learning occurs. In an appropriate learning task the student will ask: How does this affect my context? What does this do to our culture and the internal relationships among our people? How does my perception of this concept or skill compare to others' perceptions? Such strenuous dialogue is not adversarial in a context that invites spontaneity and celebrates synchronicity. For learners to create contextualized theory out of the stuff of content calls for an atmosphere of dialogue. That's the kind of theory Kurt Lewin spoke of when he said: *There is nothing so practical as a good theory*

In the case of this paper and this keynote experience, for example, you are invited to make this theory into one that works in your context. Perhaps you see ways to use learning tasks and invite quantum thinking of your students in your setting. Or perhaps you need to use "*elenchus*" and put down your competition; perhaps you must use "*dialectic*" to defend your rank and position. Perhaps in your context dialogue would be naive and ineffective. You decide! Of course you do. At least, after this keynote you will know the difference and recognize the price you pay for your choice.

Designing for dialogue is not facile. I have seen grown men and women, professors, physicians, lawyers, weep at the difficulty of keeping still when a learning moment is occurring in a small group. The new role of the professor: sit still, keep quiet, pay attention: is demanding indeed. Preparing learning tasks for dialogue takes time and effort. The reward is worth all the effort, I assure you.

Remember that the dialogue I speak of here is not Socrates' style where the teacher is central. The form of dialogue through learning tasks assumes a teacher with the humility to learn and to be changed enough to become an ever more effective global citizen.

## **RESOURCES**

How do we continue this search for ways to use dialogue in our effort to prepare for global citizenship? I can name a few resources: Global Learning Partners, Inc. now has its headquarters in Toronto and offers five courses in a curriculum for teachers who wish to design for dialogue in their work. Please take a brochure and go to our web site: [www.globalearning.com](http://www.globalearning.com). My books are useful if you are teaching teachers, as are many of the publications of Jossey Bass IN San Francisco. A second edition of LEARNING TO LISTEN LEARNING TO TEACH enhanced by quantum thinking, will be published early in 2002. I welcome e mail to my home [janevella@juno.com](mailto:janevella@juno.com). The Berkana Institute [www.berkana.org](http://www.berkana.org) offers courses and materials on quantum thinking for organizations.

Whenever you invite learners to find and raise their voices, celebrate that moment. It is the birth of dialogue for those persons and for you. You are indeed taking Socrates to task!

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