

Quantum Learning: Teaching as Dialogue

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I recently enjoyed a day at the Rodin Exhibit at the North Carolina Museum of Art. I was deeply touched by Rodin's own words on a note by his famous sculpture, *The Thinker*. "Notice," said the sculptor, "how the thinker is clearly thinking with his toes". The energy shown in the rippling muscles in the legs of Rodin's thinker is measured by quanta. A quanta, in the language of physics, is a measure of energy.

The energy manifest in the engagement of adult learners around a relevant, immediate learning task is a sign of quantum learning. The critical and creative response of adult learners to a respectful, significant open question is a sign of quantum learning. The dialogue in small groups that moves content beyond itself into the context and lives of the group is a sign of quantum learning.

Quantum Learning Defined

Quantum learning is that which uses all of the neural networks in the brain, putting things together in idiosyncratic and personal ways to make significant meaning.

Danah Zohar (1997) describes quantum thinking in terms of three functions of the brain: the one to one leap of energy between neurons on a neural tract which she calls serial thinking; the leap of energy in a pattern across a neural network which she calls patterned or associative thinking; and the explosion of energy throughout the whole brain using a network of neural networks that she names quantum thinking. Here are some examples: Serial thinking: What is the capital of Portugal? The capital of Portugal is Lisbon.

Patterned thinking: What do you notice about many of the capital cities of Europe? Many of the capitals of Europe are on waterways.

Quantum thinking: Political and economic realities are and have always been deeply entwined. Notice that all of the capitals of Europe are on waterways. How is the Internet a global waterway? And where is the capital?

Teaching as dialogue invites quantum thinking and quantum learning; it invites adult learners to “think with their toes”. I suggest the quality of such learning is one answer to current problems in education at every level.

The Dialogue Approach to Quantum Learning

The dialogue approach to teaching, using learning tasks and principles and practices named in Vella (1996) was designed at the JUBILEE Popular Education Center to enhance the teaching practice of adult educators in every field: community development, health, agriculture, literacy, higher education, and business. JUBILEE Fellows are those who have completed a rigorous five-day introductory course entitled Learning to Listen Learning to Teach.

In that course, learners use learning tasks to examine the roots of their present epistemology and practice, work with classic concepts of sound learning from sages like John Dewey, Kurt Lewin, Malcolm Knowles and Paulo Freire, and then design and use this new teaching approach in two separate events. All of the work in this five-day course is done in dialogue, in small groups and in the larger group of ten-twelve.

There are over 3000 JUBILEE Fellows around the world who can tell you about the effect of that experience as they use the dialogue approach in their work and celebrate the results with their adult students. Some of them have gone on to do an Advanced Design Course and a Master Teacher Course and a parallel course on Evaluation. As I designed these courses and wrote the books describing this practical dialogue approach to teaching, I did not know that we were in fact moving folks towards quantum learning. The “enhancement” effected by this dialogue approach to teaching can now be understood in the light of recent research in physics. Zohar (1997) holds that dialogue is the tool for creating quantum thinking.

Principles and Practices – Towards the Dialogue Approach

At this moment there are fifty principles and practices to assure the dialogue approach to teaching. These are described in detail in Training Through Dialogue (Vella, 1996). The

fifty include dialogue, respect, immediacy, relevance, engagement, sequence, the use of physical, affective and cognitive means to learning, time, titles, learning tasks, open questions, lavish affirmation, case studies, stories, warm ups, feedback, closure, consultative and deliberative voices, small groups, visuals and charts, the use of video clips, charts, music art and poetry, learners as Subjects of their own learning, The Seven Steps of Planning: WHO, WHY, WHEN WHERE, WHAT, WHAT FOR, HOW, Inclusion, inductive and deductive approaches, praxis, safety, humor, autonomy, congruence; documentation.

At one point in the *Learning to Listen Learning to Teach* course, fifty cards with these principles and practices are spread across a table. The group is invited to select one which they could omit...one which is not necessary to this approach to teaching. They cannot.

Here is the paradox: the dialogue approach is highly structured to invite spontaneity. Joseph Campbell describes the Buddha's ineffable experience under the Bo Tree. After contemplating the gift of his illumination for days in absolute stillness, the Buddha said: This cannot be taught. To me, that means that the physical, emotional and cognitive experience of learning is a personal, idiosyncratic one. One must think with one's own toes. The design of effective teaching through dialogue keeps that paradox in mind. The axioms laid out in Vella (1996) show some of the enigmatic aspects of this dialogue approach. For example:

- Don't tell what you can ask. Don't ask if you know the answer, tell in dialogue.
- Pray for doubt.
- Be careful about having too much What for your When.
- What is needed for effective teaching is – in this order – time, time and time.
- A learning task is a task for the learner!

A colleague from South Africa challenged me once after she read *Training Through Dialogue* (1996) "You have given the course away!" She referred to the fact that the entire first course is described in that text. I smiled and replied: "If anyone can teach using this dialogue approach after having read that book, more power to her!" We know that effective, quantum learning involves more than reading, more than the sharing of information.

As we teach these vital principles in the course, we use the principles and practices we are teaching. Learners are struck by the congruence, and see how important it is to be and do what you are teaching.

History and evolution of this dialogue approach:

The conceptual framework behind this particular design of a dialogue approach is eclectic. However, there is a common strain in the selected sources: they all speak to the need for a transformation of educational practice towards personal meaning-making.

Paulo Freire. As a professor at the Institute of Education of the University of Dar es Salaam in 1964, I was very close to burnout. My desire was to teach the Tanzanian teachers in the Institute and University programs to be not only effective teachers but also autonomous and culturally appropriate teachers. Everything I did as a professor felt like, and indeed was, a part of the colonial whole. Even though Tanzania was independent by this time, the colonial ethos persisted.

I was seriously thinking about a career change when a colleague gave me a copy of Paulo Freire's *Pedagogy of the Oppressed*. In many countries of the world the book was banned. Happily, in Julius Nyerere's nascent Tanzania, it was welcomed.

While I was reading it, I got a phone call: Paulo Freire was in town and would be giving a lecture at the Institute of Adult Education that afternoon. I dropped everything and ran to the Institute, somehow knowing this event was critical in my young life.

Freire warmly shared his delight at being in Africa and told about his work in Brazil and Chile in literacy programs that used the theories he shared in the *The Pedagogy of the Oppressed*. I remember the joy in the eyes of all the listeners, who, like me, were searching for an alternative to dominating teaching practices.

As we greeted Paulo at the end, I asked: "Do many women tell you they love you after these lectures?" "Oh, yes", he replied. "Many Catholic nuns?" "Yes, in fact, I am a member of a Catholic religious community of nuns: the Maryknoll Sisters! The Sisters in Chile, after a course I taught them, made me a member." We laughed together, and a love affair began.

Paulo Freire as a seminal thinker and philosopher, as an epistemologist and political strategist, wrote and taught densely. Many of my students found the English translation of his writing hard to understand. I urged them to persevere because no second-hand version would serve them as well. His descriptions of “dialogue” and his analysis of the implications of opposite of dialogue which he called “the banking approach” are the foundations of what we call teaching through dialogue.

Freire’s political, epistemological, personal, strategic teaching is, I trust, at the heart of Dialogue Education. I celebrate the fact that he would probably differ with many aspects of this approach to dialogue. We have not been faithful followers!

Kurt Lewin. Synchronicity worked for me again, as in distant Dar es Salaam it led me to Paulo Freire, when I picked up Frank and David Johnson’s book *Joining Together*. The Johnson brothers have summarized the work of Kurt Lewin in a brilliant essay. I went back to Lewin and recognized his importance in the development of a dialogue approach to teaching based on state of the art principles. I set out the Johnson and Johnson work as a dozen principles, with a set of learning tasks around each. This is one of the central cognitive pieces in our Learning to Listen Learning to Teach course.

Lewin’s Dozen

1. Effective learning will affect the learner’s cognitive structures, attitudes and values and perceptions and behavioral patterns. That is, it always involves cognitive, affective and psychomotor factors.
2. People will believe more in knowledge they have discovered themselves than in knowledge presented by others.
3. Learning is more effective when it is an active rather than a passive process.
4. Acceptance of new ideas, attitudes and behavioral patterns cannot be brought about by a piecemeal approach - one’s whole cognitive/affective/behavioral system (ideas/feelings/actions) has to change.
5. It takes more than information to change ideas, attitudes and behavioral patterns.
6. It takes more than firsthand experience to generate valid knowledge.
7. Behavior changes will be temporary unless the ideas and attitudes underlying them are changed.
8. Changes in perception of oneself and one’s social environment are necessary before changes in ideas, attitudes and behavior will take place.
9. The more supportive, accepting and caring the social environment, the freer a person is to experiment with new behaviors, attitudes and ideas.

10. For changes in behavior patterns, attitudes and ideas to be permanent, both the person and the social environment have to change
11. It is easier to change a person's ideas, attitudes and behavioral patterns when he or she accepts membership in a new group. The discussion and agreement that takes place within a group provides a personal commitment and encouragement for change that is not present when only one person is being changed.
12. A person accepts a new system of ideas, attitudes and behavioral patterns when he or she accepts membership in a new group. New groups with new role definitions and expectations for appropriate behavior are helpful in educational efforts.

When giving feedback on designs and teaching efforts, we find ourselves coming back again and again to these simple, profound principles.

Donald Oliver. Donald Oliver, in my eyes, is a peer of the both Lewin and Freire. His 1976 work *Education and Community* and his insightful *Education, Modernity and Fractured Meaning* gives us a conceptual framework to understand why we teach through dialogue. His distinction between technical knowing and ontological knowing is operative whenever we use the dialogue approach. The practices named above: video clips, small groups, open questions, visuals and charts - are technical knowing. These are important and, as Oliver suggests, our time is brilliant at such knowing. The principles that make a dialogue approach work such as respect, dialogue, engagement, sequence, inductive/deductive, accountability – are ontological knowing. They answer deeper questions of why and with whom. They reflect our response to life and to our universe.

When we design appropriate and accountable learning tasks that engage adult learners in significant dialogue and assure their learning the proposed content, we are using principles and practices, technical and ontological knowing as defined by Donald Oliver.

Oliver's 1987 text is also dense. I quote from it here to demonstrate how worthwhile it would be to read in its entirety.

Grounded knowing (or perhaps better, ontological knowing) apprehends the natural history within which events, occasions, or being emerge and become. A human birth, a storm, a conversation are all occasions. Each might be described technically by a gynecologist, a meteorologist or a socio-linguist. But in ontological terms a birth begins with one's ancestry, with imagination, a courtship, poetry, a first touch. A storm begins

with the movement of clouds, subtle changes in atmospheric pressure, wind shifts, the movement of birds and animals. It may include fallen trees and flooded streams and refreshment of life with the new water. A conversation begins with sounds, language training, experience, mood and intentionality. Therefore, ontological knowing includes feelings, vague sensibilities, and inarticulable thoughts, as well as the more technical description of such occasions as they come into being, as they exist, as they pass on. Ontological knowing is moving, dynamic and above all continually emergent.

Within grounded or ontological knowing, we feel (usually unconsciously) the many aspects of an occasion evolve into the unity of event, as if out of nowhere. Technical knowing, on the other hand, begins with sharply delineated events. Precisely defined. Technical knowing often comes out of highly controlled settings – e.g. the birth of a baby in a delivery room where the essential truth of the happening is far more profound than the terse technical statement written for the medical file. Likewise, one sees the technical description and tracking of great storms on television, where experts surrounded by computers and radar equipment are asked in substance to give final witness of the event, as if in some sense, their report were to influence what is happening. As this example illustrates, technical knowing is implicitly useful: it makes out lives more predictable, efficient and adaptive.

It is our thesis that healthy organisms, communities, societies must apprehend a universe/nature/culture that is balanced between these two qualities of knowing.
(Oliver p 14)

Danah Zohar. In April of 2000 my good friend Michael Culliton of Minneapolis sent me a copy of Danah Zohar's 1997 *Rewiring the Corporate Brain*. I did not touch it until a cold and rainy Memorial Day when I sat by the fire and read it with growing excitement from cover to cover. This was JUBILEE! We were inviting learners to do quantum learning and to celebrate quantum thinking, to see the world anew.

Three days later I had a call from Jovita Ross - Gordon inviting me to write a chapter entitled: *Quantum Learning: Teaching As Dialogue* in this source book. Hello! Can you see the synchronicity here – so similar to that experienced in my meeting with Freire and my discovery of Lewin's work. Quantum thinking celebrates such synchronicity.

I recognized our dialogue approach throughout Zohar's management book. Inclusion, engagement, respect, doing and feeling and thinking, energy, dialogue, service, small

groups, long range planning for transformation, the use of the whole brain, music, art, and creativity - this approach for quantum learning is what I have been using and teaching since 1953 without knowing quite what it was. Zohar systemically compares and contrasts Newtonian science and the new science of quantum physics and invites leadership to contemplate the painful act of rewiring the corporate brain to use the new science. Such a new brain will use the whole brain in planning and working, will include everyone in an ongoing dialogue, will consider the opportunities and potential of servant leadership in lieu of hierarchy, will live peacefully and confidently in the chaos of our current life.

I saw immediately how this approach to adult learning, using dialogue and not monologue, learning tasks and not “blah-blah”, was parallel to the rewiring Zohar described, and as painful a transformation. Tearing out the old wiring of assurance and certainty, right answers, closed questions, tests and a teacher-centered approach hurts. When Zohar claimed that the tool for quantum thinking was dialogue, I knew we were home free together. We had been inviting educators to grow new neural connectors for years. Zohar describes three ways of thinking: serial thinking which is practiced in response to closed questions; associative and parallel thinking which can be stimulated by open questions and quantum thinking which is invited by dialogue responses to a learning task.

We use the energy (quanta) in our brains in serial thinking by making one to one connections, connecting neurons on a neural tract. What is capital of New Jersey? [closed question] We use the energy (quanta) in our brains in patterned thinking by working the neural networks, and seeing or organizing thought into patterns. Look at this map of the US. What do you notice about the location of state capitals? {open question}

We can do quantum thinking by using a neural network of networks, the whole brain, creatively projecting, predicting, describing, envisioning, inventing. Examine this map and description of our state capital and capital city. If you had the opportunity to re-design your state capital, what would you include in the city? Why? {learning task} Implications for adult educators: hard work and accountability.

In the dialogue approach to teaching, we design so that that learning will take place during the session, whether that is a meeting, a seminar, a course or a training session. In fact, the teaching is minimal: the new role of the “professor” is to prepare and set the

learning task and to mentor the learners as they share their results. The new role of the professor in teaching as dialogue is as a resource person, a designer, an intense researcher, a listener, a clarifier, a celebrator and summarizer. He or she is engaged in learning - centered teaching, and must work very hard at it, indeed.

What are the indicators of success in quantum learning effected by teaching through dialogue? You will see a unique level of excitement among learners, whose experience and creativity is being honored perhaps for the first time. You will have trouble with learners questioning the theories and practices you teach: How does this fit into my context? You will have people bringing you not only unique applications of the theories you teach, but also unique transformations of those theories and skills as they use them independently in their context. You will be accountable for your teaching.

In an *Advanced Design* course recently, a community educator agreed reluctantly that he was using learning tasks in his designs, because that was what was expected in his agency. At the end of that *Advanced Design* course, this same educator said he would be using learning tasks in his designs for dialogue with the community because it was clear that this was an effective way to work. He had experienced quantum learning; he moved to quantum thinking through the three days of dialogue.

In terms of our accountability and the evaluation of our efforts at developing quantum learning through teaching through dialogue, we can be guided by this threefold matrix:

Learning takes place within the staff meeting, training session, course, seminar, workshop – by design! How do they know they know? They just did it, together and in a solo version.

Transfer takes place after the event, when the person is back at home or in the workplace or community. It is a repetition or paraphrasing of the knowledge, skills or attitudes that were practiced in the learning session. We can invite people to celebrate transfer!

Impact is the change in the community, company or person seen as a result of transfer and learning. It usually takes time to show impact...Name it and celebrate it when you see it happening.

For example, the day after that Advanced Design Course, the agency had a staff meeting and the Director and her associates designed a dialogue learning task using the Seven Steps of Planning. The WHAT (content) was the design of the new offices of the agency, available in an architect's drawing. The WHO was the complete staff: ten men and women. The WHY (situation) was that they, the staff, needed an opportunity to respond to the initial plans from their unique and personal perspectives, and to ask questions about the building process. WHEN: 45 minutes at lunch; WHERE: the board room of the agency. the WHAT FOR (achievement-based objectives): By the end of these forty-five minutes all ten staff will have

1. heard a description of the building process of the new offices;
2. examined the draft architect's drawing in pairs
3. identified and written their questions about the building process
4. identified and shared their suggestions for changes in the plans
5. heard responses to some of the questions

The Director set out five learning tasks to go with each achievement-based objective, and the staff walked out after the 45-minute lunch meeting quite excited and hopeful that they and their opinions had been heard – and publicly heard! Those questions that were not answered had been written so could be responded to privately or in the next staff meeting. The whole session was carefully documented for future reference.

This event was a clear indicator of transfer of the learning that had taken place in the Advanced Design course. I propose some indicators of impact can be: longer tenure of staff, joy in the workplace, creativity, open conflict and opposition, swift and thorough completion of project objectives, mentoring habits and the developing of mentoring relationships, new members brought in by present staff, funds raised as a function of effective documentation.

What else would you want to see as impact on any of your work? It is your task to name that in the planning stage.

Conclusion: The uses of dialogue in learning and in life

Dialogue is a quantum process, a means of doing and using quantum thinking. (Zohar, 1997, p. 136)

Inviting dialogue by teaching through learning tasks assumes inclusion. We work in small groups so that everyone can be heard. Inclusion is an important principle for teaching as dialogue. I like the open question: Whom would you exclude? Whoever is excluded from the ongoing dialogue in a company or a community is lost to that group. Their ideas might have been the most needed ones, and they are lost. Whom can we afford to exclude?

Imagine a society where teaching as dialogue is the norm. Consider the possibilities for inclusion in decision making, in program design, in collaborative work. This applies to family, university, corporate organizations.

This is a move towards a more honest and comprehensive democracy. The educational practices of a time are a clear and efficient mirror of the time. Quantum learning moves us towards a quantum society in which no one is excluded.

Autonomy, another linchpin of the dialogue approach to adult learning, comes from the Greek: auto: self and nomos: law. In the either/or world of quantum thinking, the paradox of autonomous behavior at the service of the community is acceptable and understandable.

The dialogue approach to adult learning can be summarized this way: learning tasks invite small inclusive groups to a dialogue around the content. This leads to accountable teaching and quantum learning within the teaching time frame. It celebrates the autonomy of the learner and the teacher alike.

On a planet struggling for its safety and life, where information is accessible to increasingly greater numbers of people, quantum learning is vital. The use of such information for the good of the whole cannot be mandated; it must be taught – accountably, through dialogue.

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