JSGE
The Journal of Secondary Gifted Education
Vol. XVI, No. 2/3, Winter/Spring 2005, pp. 67–73.

Caught by Our Dangling Paradigms:

How Our Metaphysical Assumptions Influence Gifted Education

Andrew Johnson
Minnesota State University, Mankato

Notions of intelligence and giftedness should keep pace with current knowledge of quantum physics and what is known abut the nature of reality. There are three perspectives as to the nature of reality. Materialistic monism views the universe as being made up of only matter and energy. Dualism views the universe as being made up of matter and energy, as well as consciousness. Transcendental monism views the universe as being made up of consciousness. Currently, materialistic monism is the predominant view in our society and in education. This parochial perspective limits the research agenda and ultimately the ability to provide services to a wide range of gifted students. This article makes four recommendations in this regard.

> "The scientific knowledge that has been gained influences the way we perceive the world. But the way the world is experienced in a particular culture influences what kind of science gets developed by that society."
>
> —Harman, 1998, p. 28

Many gifted education programs are still created around the notion that intelligence is a single, specific entity that can be measured and quantified (Hunsaker, Abeel, & Callahan, 1991; Richert, 1997). In *Spiritual Intelligence,* Dorothy Sisk and E. Paul Torrance (2001) suggest that our notions of intelligence should keep pace with quantum physics and our growing understanding of the universe. It may be, however, that our current assumptions related to the nature of reality sometimes get in the way of processing new data. This article explores how metaphysical perspectives influence educational philosophy, which in turn affect practices related to teaching, learning, and gifted education.

Metaphysical Perspectives

Harman (1989) describes three views of reality that he calls "metaphysical perspectives": materialistic monism, dualism, and transcendental monism. *Metaphysical* here refers to ontology, which is the study of the origins of the universe and the nature of reality.

Materialistic Monism

The materialist monism perspective views the universe as being made up only of matter and energy. Consciousness is something that arises out of matter. That is, our sense of self is solely an end product of neurological activity, which in turn is an end product of millions of years of evolution. All things in this purely materialistic universe consist of the sum of their parts and can be understood by breaking them down into their most basic components and measuring that which is observed and experienced. Newtonian law of cause and effect governs all events and can be used to know, predict, and ultimately control all things.

Positivism, a philosophy consistent with this view, states that knowledge exists outside of the individual. Truth can be derived only through objective observations that are proven through reliable tests and predictions (Alkove & McCarty, 1992). It is only by collecting empirical data, isolating variables, testing, and retesting that we obtain truth or can say that a thing exists. Quantitative research methodologies are used to piece together small bits of knowledge in order to understand the world in which we live. The type of thinking valued here is deductive and linear.

From this perspective, learning consists of receiving knowledge from outside of the individual, which must then be demonstrated outwardly for it to have occurred. The purpose of schools is to supply students with a designated body of knowledge and skills in a predetermined order. Teaching is a matter of transmitting knowledge from point A (teacher's head) to point B (students' heads). Academic achievement is students' ability to demonstrate or retransmit this designated body of knowledge back to the teacher (point A) or to some other measuring agency or entity such as standardized tests. Quantitative psychometric methods are used exclusively to determine and describe intelligence. Here, giftedness is a matter of having a high number on a designated type of measure. Gifted programs are designed to provide high-numbered (high-scoring) students with increased knowledge transmission and accelerated movement through the education system.

Dualism

From the dualistic perspective, the universe is comprised of two distinctly different kinds of stuff: matter and energy, as well as consciousness. Here, consciousness exists separately from matter. From this perspective, matter and energy are studied using the traditional tools of science described above. Consciousness (people's subjective interpretation of the outer phenomenal world) is studied using observations, descriptions, ethnographies, and interviews. Consciousness also pertains to the subjective interpretation of one's inner world of feelings, memories, and impressions. These may be studied using interviews, gestalt, inner exploration, dream analysis, and art. Some will posit that consciousness also includes superconsciousness or spirituality.

Constructivism is an educational philosophy consistent with this view. Here, true knowledge is seen as being personally constructed by individuals as they interact with the environment. Truth requires a value judgment and is different for each individual. Individuals construct their truths by observing and combining events in the objective outer world with images and impressions occurring in the subjective inner world. Both quantitative and qualitative research methodologies are used to discern, but qualitative research using inductive thinking is more reflective of this metaphysical perspective. Using inductive thinking, individuals look at internal and external worlds, analyze phenomena found there, and make sense of them by sorting phenomena into categories and looking for associations.

From this perspective, learning is an inner activity that uses both objective and subjective knowledge to constantly build and revise our cognitive webs. Learning then becomes a transaction between the learner and what is to be learned. The purpose of schools is to help students construct knowledge and develop the skills they need to live in their worlds successfully. Teaching is a matter of creating conditions whereby students are able to transact with knowledge. Academic achievement is seen as students' ability to use their knowledge and skills to solve real-world problems or to create products or performances that are valued in one or more cultural settings. This view of achievement reflects Gardner's (1983) definition of intelligence. It also aligns with Sternberg's (1996) concept of intelligence as using creative, analytical, and pragmatic thinking to adapt to or shape the world in which we live.

Giftedness from this perspective is having outstanding abilities to solve problems, make products, or perform in a particular domain. Gifted programs that reflect this perspective are constructed very much like the Schoolwide Enrichment Model (SEM; Renzulli & Reis, 1997), where students are exposed to a variety of subjects and are provided opportunities to learn skills and use them in complex, real-world activities in such domains as the visual arts, drama, dance, creative writing, technical writing, the sciences, and the humanities.

Transcendental Monism

Transcendental monism describes a universe in which the basic essence is consciousness (Goswami, Reed, & Goswami, 1993). Here, consciousness is primary, and matter and energy materialize from it (Herbert, 1985). From this perspective, ultimate reality is not found solely in the physical or phenomenal world as we know it; rather, it lies in a dimension or dimensions beyond the physical, which is holomovement or the ground of all that there is (Talbot, 1991). Quantum physics describes such a reality in which all things in the physical universe are connected at the quantum level (Al-Khalili, 1999; Talbot, 1991). Physicist David Bohm said that the universe can be understood only if the unbroken wholeness is perceived in a way that does

not reduce things to a series of individual entities (Nichol, 2003). At the quantum level, there is no fragmentation, only parts that are interconnected with greater systems and greater wholes. The things that we encounter in our phenomenal world (explicate reality) are merely an unfolding of a deeper reality (implicate reality), which is beyond our physical senses. It is consciousness, a very subtle form of energy, that creates movement from implicate order to the explicate order of our physical world (Bohm, 1980). Thus, consciousness is the cause, and physical phenomena are the effect.

A helpful analogy can be found in music and the images created in the heads of listeners as they engage in the act of consciously attending to the music. The music can be thought of as holomovement, or implicate reality. As the consciousness of the human listener interacts with the music, various mental images are created. These mental images, which do not exist in the absence of a conscious listener, are analogous to explicate reality. In this sense, phenomenal reality does not exist in the absence of an observer. This reflects the Copenhagen interpretation (Herbert, 1985), which posits that, if a tree falls in a forest and nobody is there to hear it, not only does it not make a sound, but the tree does not exist.

Holism, a thesis consistent with this perspective, states that the universe is made up of integrated wholes that cannot be reduced to the sum of their parts. We can never come to know the whole of reality by isolating variables in order to examine small parts. Instead, the whole is best understood by examining the principles that govern behavior within the system. Both quantitative and qualitative methodologies are used here; however, they must always be combined with a greater perspective in the form of transpersonal methodology in order to approach truth. Transpersonal research methodologies are those activities that allow an individual to move beyond personal consciousness (emotion, will, and logic) to approach universal consciousness. These data-collecting methods include meditation, systematic contemplation, vision questing, the arts, journal writing, poetry and creative writing, personal narratives, stories, religious traditions, spirituality, sacred writing, deep silence, sensory depravation, ritual, and chanting (Braud & Anderson, 1998). These can all be used as a way of seeing and representing reality. From this metaphysical perspective, all types of thinking are valued, although deep reflection, intuition, and associative thinking provide the ultimate context.

Holistic education is based on theories of holism. It is constructed around the principle of interconnectedness and seeks to integrate multiple levels of meaning and experience (Miller, 1996). Making connections is central to the curriculum process here. These connections occur between concepts, subject areas, communities, cultures, humanity, the arts, the sciences, mythology, religion, ecological systems, and history. True knowledge is seen as ultimately residing within each individual. Thus, teachers strive to create experiences in which students are able to encounter phenomena, both internal and external, so that knowledge can be realized. To learn, one must transcend one's culture, bias, values, ego, past experience, and sense of self in order to see things as they really are. Learning is said to have occurred when this view elicits a transformation of consciousness that leads to a greater nurturing of self, others, and the environment. From this perspective, a school's fundamental purpose is the creation of better human beings, which occurs through self-actualization and self-transcendence (Maslow, 1971).

Intelligence here consists of two parts: the ability to perceive the whole and the ability to think and act in ways that nurture the self, others, and the environment. Intelligence from this perspective cannot be separated from these nurturing values. Also, there is no need to identify gifted students formally because any educational models that would inhibit the growth of any student are purposefully rejected. Instead, holistic educators think in terms of identifying and developing gifted behaviors instead of gifted students, and in this sense they tend to reflect the thinking of Renzulli and Reis (1997). Classes are small and curricula are flexible and multifaceted so that these behaviors can be easily displayed and nurtured. In addition, teachers have the knowledge, skills, and authority to make decisions that will enable all students to develop their particular strengths; discover their passions; and engage in relevant, complex, real-world activities.

Figure 1 provides a general overview of how these three metaphysical perspectives project into various areas. It is important to note that there are few people who identify with or exist only in one column.

Implications and Suggestions

The purpose of this article is not to suggest that any one perspective should be adopted. Indeed, one of the current problems in gifted education is an overreliance on materialistic monism to delineate the field's agenda and an overuse of quantitative research methodologies to define and describe gifted students. Among other things, this parochial perspective leads to a narrow definition of giftedness, which limits participation. And since gifted education is not mandated in many states, there is little reason for school boards to allocate precious resources for a few

	Materialistic Monism	Dualism	Transcendental Monism
1. world view	universe consists of only matter and energy	universe consist of matter and energy, and mind-consciousness-spirit	the primary stuff of the universe is mind-consciousness-spirit.
2. consciousness	consciousness arises from matter	exists separate from matter	matter arises from consciousness
3. reality	objective universe separate from the observer	a personal construction	a dream
4. knowledge	*positivist*: exist outside the self	*constructivist*: constructed by individuals as they interact with the environment	*holistic*: exists within each individual, that which has the ability to transform
5. truth	objective examination of knowledge	requires a value judgment and is different for each individual	requires reflection and examination, an inward journey
6. learning	demonstrated outwardly for it to exist.	inner state, constructing cognitive webs	free one's self from illusion, expand consciousness, transcendence
7. intelligence	ability to use linear thinking and deductive reasoning.	ability to solve problem, create products, and shape environment	ability to perceive wholes and nurture self, others, and environment
8. giftedness	top 2–5% as measured by psychometric ability tests.	outstanding problem solvers and product creators in a variety of domains	those who are able to solve problems and create products that nurture self, others, and environment
9. purpose, teaching style	transmission	transaction	transformation
10. educational model	factory model	Dewey, social constructivist	Waldorf, Montessori, holistic education
11. primary psychological perspective	behaviorism	cognitive psychology	transpersonal psychology,
12. primary research perspective	quantitative methodology	qualitative methodology	transpersonal methodology
13. primary mode of thinking	deductive, lines	inductive, fields	intuitive, images, balls, B-cognition
14. scientific paradigm	phenomenalogical, cause-effect, natural laws, causal reality, atomistic, reductionist, positivistic	observational, objective, and interpretative, contextual, subjective, ethnographic,	quantum physics, holomovement, transcendentalism

Figure 1. Metaphysical perspectives

Creative thinking: the ability to generate associations and possibilities.
Playful imagination: the ability to think outside the boundaries of what of is, in order to envision the consequences of what might be.
Intuition: those gut feelings and thought balls that seem to hit us suddenly.
Altered states of consciousness: a state where perception and deep thinking seem to transcend personal consciousness.
B-cognition: a state where there is total absorption in the moment or task, complete focus, and a sense of wholeness and interconnectedness.
Flow: a state of optimal experience where consciousness is harmoniously ordered.

Figure 2. Trans-logical thinking

students. However, by including dualism and transcendental monism perspectives in defining giftedness, greater participation would be invited while at the same time representing a more accurate picture of giftedness in real-world environments. These greater numbers could then be used to justify more resources. In this context, I have four suggestions to make.

First, the field of gifted education should move toward a more expansive research agenda in terms of methodology and subject matter. The goal of research in this field is to produce knowledge and understanding that will ultimately lead to the development of policies and practices that, in turn, will enhance schools' abilities to meet the special needs of students with a wide variety of outstanding talents. However, our fundamental perceptions about the nature of reality can prevent the attainment of this goal. Clinging too tightly to a particular perception affects what we look at, how we look at it, what we see, what we represent, and how we represent it. In this sense, we become the person who loses a key in the shadows, but looks for it under the street light because there is more light there.

What is suggested here is that all three methodologies be accepted for the systematic inquiry of truth. Of course, methodology should always reflect the type of questions asked; however, if one type of methodology dominates academic discourse, a conscious decision should be made to expand the repertoire of research questions. This will ensure that researchers provide a multidimensional view of reality and represent a broader view of the world. An expanded research agenda would also serve to reinforce the importance of the types of thinking that are not easily quantified, yet are often linked with outstanding human achievement (Harman & Rheingold, 1984) and associated with giftedness (see below).

Second, gifted educators should recognize and help students develop a variety of types of thinking, including trans-logical thinking. Traditional scientific methodologies using logical, deductive thinking have been essential in the profound technological advancements over the last 500 years; however, some of the most important discoveries have come as a result of trans-logical thinking (see Figure 2). Trans-logical thinking plays an important role in outstanding performances and problem solving in all areas; however, little—if any—attention is given to it in most schools or gifted education programs. As stated above, perhaps this is because such thinking does not lend itself to measurement.

One form of trans-logical thinking, altered states of consciousness, has been particularly prominent in innovations in both the science and the arts (Harman & Rheingold, 1984). In altered states, perception goes beyond the normal senses and thinking goes beyond logical, ego-based thinking. Maslow's (1998) description of the B-cognition, or "being cognition," is a form of trans-logical thinking that occurs during peak experiences. Here, among other things, there is a sense of interconnectedness, a perceived lack of borders between self and the universe, intense focus and total attention, a deep sense of knowing that goes beyond the object, and a distortion in one's sense of time and space. This is also similar to Csikszentmihalyi's (1990) description of flow, in which consciousness is perfectly ordered and organized. This state is common in optimal performances in the arts, athletics, science, and academics. During these optimal

performances there is an effortless flow of psychic energy as all information that comes into awareness is totally congruent with the goals of that current activity or experience.

Third, include teaching for wisdom as a component of our gifted education programs. Sternberg (2000) advocates that wisdom be perceived and included as a type of giftedness. He defines wisdom as the application of tacit knowledge, mediated by values, toward the goal of achieving a common good through a balance of interests. This definition could be expanded slightly to include the ability to solve problems or create products that nurture self, others, and the environment. This would then reflect the definition of intelligence and giftedness from the transcendental monism perspective. In teaching for wisdom, all students would learn to develop their talents and abilities for this broader purpose. Sternberg's offered the following suggestions for developing wisdom in the classroom:

1. Provide students with problems that require wisdom to solve.
2. Help students think in terms of the common good when solving problems.
3. Teaching students to balance their own interests with those of other people and institutions.
4. Provide examples of and analyze wise thinking in the past.
5. Model wisdom for students.
6. Help students think dialectically.
7. Show students that you value wise problem solving through recognition and reinforcement.
8. Link learning to students' lives by encouraging them to carry their learning outside the classroom.

Finally, reexamine and redefine the purpose of gifted education programs. The "why" questions are not asked often enough. It is our educational philosophies and assumptions about the nature of reality and the purpose of education that form the basis for our educational practice. And what is the ultimate purpose of education? Maslow (1971) and others holistic educators would posit that the fundamental purpose of education is self-actualization, which is to be fully human and to realize one's full potential. In this sense, our gifted education programs should be designed to help students identify and develop their abilities and discover their passions and interests. To this end, we cannot become fully human if we do not first recognize that which makes us so: our emotions, imagination, intuition, ideals, values, and creativity. Thus, gifted education programs should also include the inner curriculum, which is a school's plan for addressing the inner life of students (Johnson, 2004).

Final Thoughts

In the past, the field of gifted education has been a leader in education in terms of new philosophies, strategies, and pedagogy. This will continue to be the case to the extent that the field is willing and able to venture beyond familiar metaphysical paradigms and explore new ideas in terms of research methodologies, educational philosophies, educational practices, notions of intelligence, and definitions of giftedness.

> "The function of education is to create human beings who are integrated and therefore intelligent. . . . Intelligence is the capacity to perceive the essential, the what is; and to awaken this capacity, in oneself and in others, is education."
>
> —Indian philosopher
> Jiddu Krishnamurti, 1953 p. 14

References

Al-Khalili, J. (1999). *Black holes, worm holes & time machines*. London: Institute of Physics.

Alkove, L., & McCarty, B. (1992). Plain talk: Recognizing positivism and constructivism in practice. *Journal of the Association of Teacher Educators, 14*, 16–22.

Bohm, D. (1980). *Wholeness and implicate order*. London: Routledge.

Braud, W., & Anderson, R. (1998). *Transpersonal research methods for the social sciences: Honoring human experience.* Thousand Oaks, CA: Sage.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience.* New York: HarperPerennial.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: BasicBooks.

Goswami A., Reed, R., & Goswami, M. (1993). *The self-aware universe: How consciousness creates the material world*. New York: Putnam.

Harman, W., & Rheingold, H. (1984). *Higher creativity: Liberating the unconscious for breakthrough insights*. Los Angelos: Tarcher.

Harman, W. (1998). *Global mind change: The new age revolution in the way we think* (2nd ed). San Franciso: Berrett-Koehler.

Herbert, N. (1985). *Quantum reality*: *Beyond the new physics.* New York: Doubleday.

Hunsaker, S. L., Abeel, L. B., & Callahan, C. M. (1991). *Instrument use in the identification of gifted and talented*

children. Paper presented at the meeting of the Jacob Javits Gifted and Talented Education Program Grant Recipients, Washington, DC. (ERIC Document Reproduction Service No. Ed 334 732)

Johnson, A. (2004). *Gifted students and the inner curriculum: Seven literacy techniques to attend to inner dimensions*. Denver, CO: Institute for the Development of Gifted Education, University of Denver.

Krishnamurti, J. (1953). *Education and the significance of life.* San Francisco: HarperCollins.

Maslow, A. H. (1998). *Toward a psychology of being* (3rd ed.). New York: Wiley.

Maslow, A. H. (1971). *The farther reaches of human nature.* New York: Viking Press.

Miller, J. P. (1996). *The holistic curriculum.* Toronto: OISE Press.

Nichol, L. (Ed.). (2003). *The essential David Bohm.* New York: Routledge.

Renzulli, J. S., & Reis, S. M. (1997). The Schoolwide Enrichment Model: New directions for developing high-end learning. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (2nd ed., pp. 136–154). Needham Heights, MA: Allyn and Bacon.

Richert, E. S. (1997). Excellence with equity in identification and programming. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (2nd ed., pp. 75–88). Needham Heights, MA: Allyn and Bacon.

Sisk, D., & Torrance, E. P. (2001). *Spiritual intelligence: Developing higher consciousness*. Buffalo, NY: Creative Education Foundation Press.

Sternberg, R. (1996). *Successful intelligence: How practical and creative intelligence determine success in life*. New York: Plume.

Sternberg, R. (2000). Wisdom as a form of giftedness. *Gifted Child Quarterly, 44*, 252–260.

Talbot, M. (1991). *The holographic universe*. New York. HarperPerennial.