Formulations of Intelligence: How implementing diverse perspectives of intelligence into curriculum can provide variety on learning about and from the world.

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Abstract

Multiple Perspectives on Formulation of Intelligence: How implementing Gardner's Multiple Intelligence theory and Einstein's thinking into curriculum can provide an abundance of variety on learning about and from the world.

When you speak, how do you visualize or think about the words in your head? Do you write them on paper, or perhaps by typing them on a keyboard? You may not visualize your speech at all, but you may have a personal regulation system that you use when you prepare speech. We are continuously discovering new ways to integrate learning to coincide with development. Dimensions of intelligence can be accessed in different ways, and through different experiences in their individuality. The primary focus of this proposal would be how a growing person processes stimuli of interest and the different ways in which their environment exposes them to multiple intellectual processes. Personal meanings are created when information is perceived by an individual's experiences to all forms of sensory information. In an academic setting, students should be engaging in their own formulations of intelligence, and encouraged to discover the best way they personally learn. Natural learning occurs spontaneously and is congruent with an individual's inner nature. This knowledge construction enables learners to explain and adapt in any academic setting, simultaneously supporting themselves, the educator, and other peers. Children develop language knowledge comparable to how scientists develop scientific knowledge, which educators could then integrate the scientific process at an earlier age to support this engagement in their environments. Integrating a learner centered philosophy into a diverse curriculum can support all forms of intelligence and could open the door to new perspectives of the world.

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When I was in elementary school, my teacher wanted to share with the class a neat trick she had learned. She used her language to describe a physical process with her hand, (making an okay sign) and then used her speech to alert our auditory processes to do a task. The task she stated was different than what she had visually modeled, and the classroom responded in different ways. When she instructed the classroom to put their hand on their cheek, my teacher put her hand on her chin. I remembered looking around the room, my peers smiling at the turn of events, and noticed that I was potentially the only student that had done the verbal instructions. Through this one action, my teacher showed me that I may not perceive the world in the same way as my peers. The human brain is continuously becoming more complex. A study done by Robert Sylwester, who was an Emeritus Professor of Education here at the University of Oregon, discloses in 1994 how modern studies of human brain structure show incredible complexity of approximately 100 billion neurons, each connected to thousands of other neurons and forming more connections than there are atoms in the entire universe.[1]

Howard Gardner defines intelligence as a biopsychological potential of our species to create meaning from information in many different ways.[2] One example of utilizing this potential is within the realm of theoretical physics, with Albert Einstein formulating different ways to conceptualize the universe around and on our planet. The primary focus of this essay is would be how a growing person processes stimuli of interest and the different ways in

[1] Green, F. E. (1999). Brain and learning research: implications for meeting the needs of diverse learners. Education, 119(4), 682.
[2] Gardner, H. (1999). Intelligence Reframed: Multiple Intelligences for the 21st Century. New York, NY: Basic Books.

which their environment exposes them to the process of learning. That process is then examined, allowing for students to be more involved within their cognitive processes.

All academic subjects have intelligences that intertwine. People cannot isolate their intelligences due to the many ways in which we absorb information. We each have a unique blend of intelligences, and how we may utilize them varies from person to person. Gardner states that assessment of the multiple intelligences is needed only when one has a strong reason for it, and it is best to administer any form of evaluation in a comfortable setting with materials and cultural settings familiar to the individual. It is impossible to evaluate only one intelligence at a time, as our brains receive and filter out many forms of sensory information. Even when exposed to random stimuli from a student's home environment, the student cannot differentiate learning from inside of a classroom and inside their home environment. Because of this, student data regarding reading has increased due to the larger likelihood that students are engaging with reading at their home.[3]

My favorite question to ask other human beings is: Do you visualize words while you speak? Many individuals have a hard time answering this question, because they have never been asked. Perhaps you may not visualize your speech, but we all have a personal regulation system that we use when we prepare our speech, ideas, and other forms of meaning. School itself in our many cultures has varying degrees of differentiation throughout the world, and our western culture is currently stuck in a particular set of values. Standardization and privatization are rising within the field of education, even though students are studying more

[3] Ravitch, D. (2014) Reign of Error: The Hoax of the Privatization Movement and the Danger to America's Public Schools. USA: Vintage Books. 44-55.

advanced information within subjects than fifty years ago. Educators cannot become standardized, as the process of using one's own judgement to decide how another human should learn something is up to the individual. The act of evaluation is not science, and the deciding how to deploy one's intelligences is a question of values, not computational power.[4] Education in our modern world should provide the foundation that students need to exercise their intellectual expertise, allowing for these dimensions of intelligence to be accessed in different ways.

Lynn Waterhouse challenged Howard Garner's theory in 2006, stating that the empirical evidence regarding the theory has been overlooked. Gardner responds stating that Waterhouse misunderstood, failing to recognize intelligences as composites of fine grained neurological sub processes but not those sub processes themselves, as biopsychological information processing capacities and the vases on with an individual can participate in meaningful activities in the broader cultural scope.[5] The theory of multiple intelligences is accessed with scientific evidence, and does not contain any moral stance. Intelligences themselves are not moral processes, more tools that humans use cognitively to formulate meaning.

Personal meanings are created when information is perceived by an individual's experiences to all forms of sensory information. In an academic setting, students should be engaging in their own formulations of intelligence, and encouraged to discover the best way they personally learn. When students are learning, their mistakes outline and are attempting to understand the intentions and meanings that attempt to develop the rules and processes

[4] Gardner, H. (1999). Intelligence Reframed: Multiple Intelligences for the 21st Century. New York, NY: Basic Books.

[5] Gardner, H., & Moran, S. (2006). The Science of Multiple Intelligences Theory: A Response to Lynn Waterhouse. Educational Psychologist, 41(4), 227-232.

used by developing readers and writers within a society. “Because of this indirect learning, the child’s knowledge is largely implicit; that is, the child is capable of employing the rules, processes, and norms to generate and use language, but is unable to verbalize them” (Kucer 2014, p.569). Children develop language knowledge comparable to how scientists develop scientific knowledge, which educators could then integrate the scientific process at an earlier age to support this engagement in their environments. This overlapping between disciplines can be used to scaffold knowledge throughout the day while incorporating multiple perspectives within the classroom environment.

Dimensions of intelligence can be accessed in different ways, and through different experiences in their individuality. Every human is unique within their neurodiversity, and integrating a learner focused curriculum can support developing humans in formulating their understanding of stimuli while being exposed to multiple intellectual processes. When students are engaged in their own concepts of intelligence, they can and should also be encouraged to discover the best ways in which they personally learn. Because this knowledge construction occurs naturally and is congruent with their inner nature, students are then able to expand from this construction and adapt in any setting, simultaneously supporting themselves, educators, and their peers. “Without dialogue there is no communication, and without communication there can be no true education.” (Freire 1970, p.81) Gearing curriculum towards optimal cognitive development can provide a variety of learning about and from the world.

Einstein was able to with pure thought, create new theoretical hypothesis as well as give us the perplexing understanding of the universe. He used thought experiments to visualize two contradictory theories regarding light, and questioned what simultaneous

actually means. This questioning, along with his hobbies of conceptualizing different ways to visualize and think, lead him to understand that the flow of time itself depends on how you are moving. This in turn led him to developing the Special theory of Relativity:

> *He imaged a person inside of a box, floating weightlessly within the universe. If the person were to accelerate downward until they were standing at the bottom, he hypothesized: has the box moved close to a planet, or has someone attached a rope to the box, and is now pulling the box upwards? He answered his own question by realizing that gravity is acceleration. He then began to formulate a new theory of gravity.* [6]

School over emphasizes some intelligences and eludes others. We as humans have so much more that we can construct when we allow space for disciplines other than talking, writing, arithmetic, and reading. Integrating a learner centered philosophy into a diverse curriculum can support all forms of intelligence and could open the door to new perspectives of the world. "We [the students] were there to prove this [conformity] by showing how well we could become clones of our peers." (hooks 1994, p.4)

The next steps within this ideology is to consider two different concepts. Montessori classroom models do work within the framework of this curriculum, and I admire how students level up with a more knowledgeable other or scaffold learning and can approach each level in new ways, as long as they reach the learning objective set for each activity. This could potentially be a form of assessment within this model of education, allowing for individual assessment. Once a student has completed all available levels, students could peruse more levels within their realm of interests, however this educational model involves

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[6] Lockhead J. (Filmmaker). (2015) Inside Einstein's Mind. [Television series episode] PBS (Producer), NOVA. Film retrieved from https://uoregon-kanopystreaming-com.libproxy.uoregon.edu/video/nova-inside-einsteins-mind# (00:09:25 – 00:17:50)

more independent, one on one educational techniques and is harder to implement classroom wide. How society typically divides classrooms by age could also be up for debate within this curriculum as well. The concept that all students are ready to advance or potentially learn at the same time as other students might not fit into this model of an authentic learning environment. Not all students progress at the same time throughout learning, and more investigation into the concept of age and development within this model of curriculum is needed.

If the theory of multiple intelligences along with a learner centered curriculum was implemented into practice, classrooms full of developing minds would be able to exercise their intellectual expertise, and become more engaged in their learning. Lessons would be generally exciting, meaningful, and offer students a variety of ways to complete their tasks.[7] Activities would engage student bodies and emphasize social interactions through games, simulations, roleplaying, field trips, dance, art and music. We need educators understanding both assumed needs and expressed needs, helping students discover what they might want to do and help students explore interest and evaluate their own aptitudes in academic subjects and fields.[8] Differentiation is important in school so we will have a workforce of people that are willing to bring different ideas to the table instead of promoting conformity. We need diverse perspectives within curriculum to provide students with multiple opportunities, to make school more enjoyable to rekindle the love of learning.

[7] Schiro, M. S. (2013). Curriculum theory: Conflicting visions and enduring concerns (2nd edition). Thousand Oaks, CA: SAGE. P.134- 142
[8] Noddings, N. (2012). "The caring relation in teaching." Oxford Review of Education, 38(6), 771-781.

References

Blake, B., & Pope, T. (2008). Developmental psychology: Incorporating Piaget's and Vygotsky's theories in classrooms. Journal of Cross-Disciplinary Perspectives in Education

Edwards, O. (2009, April 01). An interview with the father of Multiple Intelligences. Retrieved March 08, 2017, article retrieved from https://www.edutopia.org/multiple-intelligences-howard-gardner-interview

Freire, P. (1970). Pedagogy of the oppressed. New York, NY: Continuum.

Gardner, H. (1999). Intelligence Reframed: Multiple Intelligences for the 21st Century. New York, NY: Basic Books.

Gardner, H., & Moran, S. (2006). The Science of Multiple Intelligences Theory: A Response to Lynn Waterhouse. Educational Psychologist, 41(4), 227-232.

Green, F. E. (1999). Brain and learning research: implications for meeting the needs of diverse learners. Education, 119(4), 682.

hooks, b. (1994). Teaching to transgress: Education as the practice of freedom. New York, NY: Routledge.

Kim, H. S. (2002). We talk, therefore we think? A cultural analysis of the effect of talking on thinking. Journal of Personality and Social Psychology, 83(4), 828-842.

Kucer, S.B. (2009). Dimensions of Literacy: A Conceptual Base for Teaching Reading and Writing in School Settings (3rd Ed.). London, UK: Routledge. 559 – 610.

Noddings, N. (2012). "The caring relation in teaching." Oxford Review of Education, 38(6), 771-781.

Rogoff, Barbara. (2003). The Cultural Nature of Human Development. Oxford: Oxford University Press.

Ravitch, D. (2014) Reign of Error: The Hoax of the Privatization Movement and the Danger to America's Public Schools. USA: Vintage Books. 44-55.

Schiro, M. S. (2013). Curriculum theory: Conflicting visions and enduring concerns (2nd edition). Thousand Oaks, CA: SAGE. P.134- 142

Stoehr, J., & Fogarty, R. (1995). Integrating curricula with multiple intelligences: teams, themes, and threads. United States of America: Skylight Pub.

Sylwester (1993, 1994) as cited in: Green, F. E. (1999). Brain and learning research: implications for meeting the needs of diverse learners. Education, 119(4), 682.

Witt J. & Dodge A., (2015) Howard Gardner Multiple Intelligence Theory. Personality Hacker Podcast. Podcast retrieved from http://www.personalityhacker.com/podcast-episode-0075-howard-gardner-multiple-intelligence-theory/

Lockhead J. (Filmmaker). (2015) Inside Einstein's Mind. [Television series episode] PBS (Producer), NOVA. Film retrieved from https://uoregon-kanopystreaming-com.libproxy.uoregon.edu/video/nova-inside-einsteins-mind# (00:09:25 – 00:17:50)