



What Einstein Wants Us to Know About Children

By Rick Miller

Albert Einstein taught us a lot about our universe. He was able to see the obvious in the invisible. As we have come to better understand through his discoveries that is no small accomplishment. We have also realized not only his achievements in the world of science, most specifically physics, but also his deep understanding of humankind and human potential.

For well over a century, scientists, philosophers, classroom teachers, and other mortals have been drawn to this sockless professor, who used poetic eloquence and simplicity to afford humankind a glimpse into the mind of the universe.

What was it about this 26-year-old assistant patent clerk, who had dropped out of high school, failed on his first attempt at entering college, and couldn't even find a job as a high school teacher that still permitted him to understand the creation of the universe? And, equally important, how can Einstein's most famous equation help us better understand the enormous energy and potential that exists in all children.

This paper will explore a series of concepts drawn from Professor Einstein's work for the purpose of establishing a theoretical equation that will offer a greater understanding of our world's children and their place in our universe.

But first let's try to understand what we know about the intelligence and potential of our children. Over the centuries, learned individuals have argued about differences of intelligence and capacity in the many races that inhabit our planet. Our history is filled with those in power relegating certain groups of people to inferior positions within society's sectors. Attempts were made to prove these racial, gender, ethnic or socio-economic stereotypes scientifically valid. Fortunately, sound science usually saves the day. Unfortunately for many, that day comes much too late. Yet, in today's enlightened industrial and technologically advanced society, remnants of these prejudices continue to manifest themselves with peculiar and damaging consequences. The most common of these attempts to diminish the capacity of one group over another is the use and abuse of the misguided expression, "youth at risk."

After careful examination, we have come to understand that children labeled as "at risk" often seem to be members of the same population groups previous generations tried to demean intellectually and socially. We continue to attempt to create new criteria so we can appear to be on some solid scientific footing, only to find ourselves in the same quicksand as those who tried to impose their biases on us decades earlier. When we study the criteria we have established for those we have identified as "at risk" we again find ourselves disproportionately devaluing the intelligence and potential of certain groups and individuals of color, ethnicity, and socio-economic backgrounds.

So why do we continue to search for reasons, arguments, and facts to establish why some people or children do well intellectually, socially, and economically, and others don't? And why do the same individuals and groups continue to be identified as handicapped by circumstances whether it is their race, ethnicity, socio economic status, language, the educational achievement of their parents and so forth?

Let's return to Dr. Einstein so he may participate in this discussion as he did for the world of physics, cosmology, astrophysics, nuclear physics, solid state physics, space travel, and electronics, just to name a few. His presence will enable us to relate his understanding about the workings of the universe to our knowledge about children.

To engage the good professor we must understand how he concluded that $E=mc^2$. The simplest answer to this most complex question can be found in the manner in which Einstein viewed his world. He had the uncanny ability to question everything and everybody, even the icons of the scientific world. "Imagination is more important than knowledge," he said, "for knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand." To know this side of Albert Einstein prepares us for this next insight. "All I have tried to do in my life is ask a few questions. Could God have created the universe any other way, or had he no choice? And how would I have made the universe if I had the chance?"

It isn't surprising then that Einstein took on the scientific establishment and ushered in a new, more precise understanding of our universe. Part of a series of papers he wrote in 1905 was, "Does the Inertia of a Body Depend Upon its Energy Content?" He suggested that mass and energy were basically two sides of the same coin. The formula explains the dynamic relationship between energy and matter. The introduction of c^2 is the conversion factor explaining how the mass-energy linkage operates (Bodanis, 2000).

The next question, then, is how much energy exists in mass? Einstein's answer is that it is almost beyond comprehension. Mass is any object or substance that can be determined by the weight on a scale or the amount of force necessary to accelerate it. Mass, then, is omnipresent in our universe and the amount of energy ready to explode from it is equal to the speed of light squared, multiplied by the object's mass. If someone weighs 150 pounds, you would then need to multiply that number by 448,900,000,000,000 which is the speed of light squared or, as Einstein represented it, c^2 . That would be enough energy to power a small city for a week, if only you could convert it (Moring, G 2000).

So what is Dr. Einstein teaching us about children? First, children are, in fact, part of our universe. They contain mass, and as we have learned, mass converted into energy is enormous. However, human energy is converted into achievement. It is represented by our inherent capacity to contribute to those areas that improve our planet and our universe. Therefore, we will represent our Theory of Human Potential by the equation $P=kc^2$. Just as simply as Einstein's $E=mc^2$ equation represents our understanding of the universe and how it operates, we must also express our understanding of our children in an equally profound manner, with uncomplicated ease and grace so as to capture the enormous potential each child is capable of offering our worlds.

Let us take a moment and precisely analyze the $P=kc^2$ principle.

If energy and mass are manifestations of the same thing, regardless from where that mass is derived, and its energy potential is always equal to itself multiplied by the speed of light squared, then our equation must represent that all children ("k" for kids) regardless of their ancestry, current conditions, gender, or any other conditions, real or imagined, possess an enormous amount of potential (P). We could effectively argue that the laws of the universe would require us to apply c^2 to understand how much potential there is, and we would probably be quite close. Our first challenge requires us to accept this equation, not necessarily as fact, but that it makes sense, which in itself is not that easy. Einstein's work was essentially ignored when it was first published. It is difficult for many of us to abandon our thoughts and beliefs, even in the face of new evidence. But Dr. Einstein also taught us that "We cannot solve today's significant problems at the same level of thinking we were at when we created them."

In our families, education, and social services institutions we are still searching for the tools required to release the enormous potential we understand exists in all children, and convert it into positive achievement. But we cannot release that potential if we don't believe it exists in all children. Einstein taught us that energy exists in all matter, not just some.

At the end of the nineteenth century, scientists of the day approached their questions as though nothing was connected to anything else. Some sought answers to the nature of light, the structure of the atom, the lack of ether, mass as separate from energy and so on. It took Einstein to connect the dots.

We question whether we have returned or possibly never left the late 1800s. We continue to look at our children through separate microscopes or telescopes, failing to connect the dots, and only seeing part of the problem. For example, do our

parents really engage with their children's teachers? Do our teachers collaborate with our pre-school, before school and after school youth service organizations? Do our youth service professionals really know what is going on in the schools and homes of the children they serve? The answer is a deafening "no!" Our children are shuffled from one theoretical framework and practitioner to another.

"God does not play dice with the universe," Einstein stated. We agree! Furthermore, we do not believe God plays dice with our children's potential. Unfortunately, we do. Our failure to recognize their potential and connect the dots reduces our children's future to a roll of the dice. Some will make it and others will not.

Yet, we have discovered the one powerful factor we know that if adopted would ensure the release of a huge amount of every child's positive potential, thus converting it into achievement. That factor is our commitment. But it has become much easier to blame, create stereotypes, and ignore the real issues than it is to offer every single child the one factor they need to release their potential.

At birth our babies have 100 billion neurons ready to connect. That is a lot of potential. Over the next three years the importance of the nurturing process is critical to the creation of neural pathways needed to help the brain mature and take advantage of all the potential it possesses. Unless parents are committed to understanding and practicing the stimulation their babies' brains need during this time, many of those neural pathways may never be created. During the first 18 years of a child's life his/her brain, mind, spirit, intellect, and body develop rapidly. At each stage of this development – 0-3 years of age; 4-6; 7-10; 11-14 and 15-18 – the forces of nature are in place waiting to be triggered. That can only happen if we as a community are committed to releasing the potential we know exists in every child without exception.

Is there anything in Einstein's work that can help us understand the importance of commitment? Yes, indeed. Let us return to the value of the speed of light squared and why in our universe such a value is so important. Firstly, "squaring" a number is something we understand mathematically in our physical laws. Secondly, once we discovered that the speed of light is the one absolute constant in our world it was then a natural assumption to combine these two understandings to explain how even very little mass is magnified enormously when it emerges on the side of energy (Bodanis, 2000).

In our social world we must take advantage of that knowledge by recognizing that when we can rally a community around our children so that every child experiences the same level of commitment from many adults, then the concept of commitment is squared. In other words, mass cannot be converted into energy unless we introduce the speed of light squared.

According to an article entitled, "Neurons to Neighborhoods," author Lynn McDonald cites research that shows that low social capital (social isolation) i.e. the commitment or lack of it a village makes to its children is predictive of earlier death, more illness, more crime in neighborhoods, less economic success, more violence and less school success. Children cannot fully realize their full potential unless we are committed to understanding and releasing their potential. Every caring and committed adult who becomes part of the child's development, whether that person is a teacher, coach, minister, rabbi, youth or recreation worker, counselor, bus driver, school cafeteria worker, neighbor or one of the hundreds and thousands of adults who will cross paths with our children during their first 18 developmental years can make a contribution in support of those children's lives. We define this as squaring our commitment to explain as our description of the mass-energy dynamic explained how we can release the potential that exists in all young people.

In conclusion, this paper was developed to draw upon the universal knowledge Albert Einstein offered in his 1905 article entitled, "Does the Inertia of a Body Depend on its Energy Content?" in which he introduced to the world the equation $E=mc^2$. By drawing upon his argument we concluded that the laws of the universe also apply to children as they apply to mass and energy. Instead of trying to find reasons why some children succeed and others fail, we contend that first we must recognize that all children, regardless of their gender and social, economic, or ethnic, background or other factors, possess the same capacity to succeed and achieve if we are committed by our positive relationships with them to release the enormous potential each possesses, without exception.

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