

Creating Innovators: Harvard author teaches parents, educators how to encourage innovation

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Creating Innovators by Tony Wagner addresses how parents and educators can encourage the next generation of inventors and entrepreneurs.

Education expert Tony Wagner's new book [Creating Innovators](#) offers guidance to parents, educators and employers on ways to nourish the innovative spirit.

Wagner is the first Innovation Education Fellow at the [Technology & Entrepreneurship Center](#) at [Harvard](#). He has also served as senior advisor to the [Bill and Melinda Gates Foundation](#). His research for *Creating Innovators* involved multiple conversations with people who discovered or stumbled upon the formula for innovation – an approach to learning, he believes is crucial to being successful in the 21st century.

Q: What is an innovation driven economy?

A: I believe we have to transition away from economies that are driven by consumer spending and consumption toward economies that are driven by producing more and better ideas. Problem solvers will flourish in the innovative economy.

Q: At what age can parents or educators start acting on your principles?

A: One of my central findings is that parents and the best teachers of the young innovators who I profiled really nurtured intrinsic motivation. We're all born creative, curious, imaginative. A four-year-old asks a hundred questions a

day. By the time he or she is eight years old the child has learned that it's more important to get the right answer than to ask questions. The best parents and teachers encourage curiosity with discovery based play – fewer toys, toys without batteries, toys you can use in multiple ways – clay, sand, blocks and paint.

Play moves into passion and then purpose. Parents and teachers made time for children to find and explore their passions – to discover what it was that they were truly interested in. And then as these young people grew older, their passions morphed, changed and evolved to a deeper sense of purpose and a desire to in some way make a difference in the world, a way to give back. The developmental arch from play to passion to purpose really begins when a child is a toddler.

Q: Can these principles work in the general school system?

A: We have a long history of really good primary schools, Montessori schools.

Recent research has shown them to be remarkable in the number of innovators and entrepreneurs that (Montessori has) produced – people like Jeff Bezos – the co-founders of Google, Jimmy Wales who founded Wikipedia – all went to Montessori schools. The kids are given opportunities to explore independently, to pursue an interest and to develop that interest.

Q: Explain the relationship between play, passion and purpose.

A: It's a continuum, but at an adult level they become integrated. Developmentally we start off exploring the world through play – that is how children relate to the world. Parents and teachers encouraged young people to find and pursue passions – to discover what it is that most interests them. Parents must value this over more than just academic achievement for its own sake. In the case of teachers in the classroom they make time in each class for young people to ask their own questions, do their own projects, do their own investigations and research – incorporate that into the class for that kind of independent or small group enquiry. What happens along the way is these young people pursue passions from the age of 10 or 11 – their passions morph, they evolve to the point where the passions have matured into a deeper sense of purpose. It's not just passion that drives them at this point – they now want to make a difference – to give back. All of that becomes an expression of play.

Q: Explain the difference between the culture of schooling and the culture of learning.

A: The culture of schooling relies heavily on extrinsic motivation – carrots and sticks, A's and F's – pizza for good test scores. But the culture of learning, the culture which encourages innovators is all about intrinsic motivations. The culture of schooling penalizes failure and creates risk aversion. The culture of learning produces innovators, which is all about trial and error, learning from mistakes and not even thinking about failure. The culture of learning places a strong emphasis on team work and collaboration. Innovation turns out to be a team sport. The culture of schooling is about individual achievement. So much of learning in conventional schools is all about consuming information and then regurgitating it.

Q: How important is failure?

A: It's how you learn self-confidence and the qualities of perseverance. The danger of helicopter parenting is that it attempts to protect all kids from failure so they never gain real confidence.

Q: What is the role of specialization or “expertise?”

A: The world doesn’t care what we know anymore. Content, knowledge has become a free commodity like air. I could become an expert in something pretty quickly. What I may not be able to do with that knowledge is create something new. Then it becomes a matter of skill and will, and our education system has done absolutely nothing to develop skill or will.

Q: Can everyone be a Steve Jobs?

A: Many people think of Steve Jobs as exceptional — which he was. He was a genius — highly creative. Most of us are not going to become another Steve Jobs. We are not going to become “disruptive innovators” the way Jobs was. We all have potential to become innovative in whatever it is we do — to bring that spark of imagination, that curiosity that willingness to try something new.”