World Class Learners – Yong Zhao

Introduction – To Create is Human

"In 2011, nearly 75 million youth aged15 to 24 were unemployed worldwide" (p. 1).

"22.3 million young people – were inactive in the fourth quarter of 2010, neither in jobs nor in education or training" (United Nations, 2011) (p. 2).

"The World Economic Forum, for example, has identified entrepreneurship education as the core of its Global Education Initiative (World Economic Forum, 2009, 2011) because '[I]nnovation and entrepreneurship provide a way forward for solving the global challenges of the 21st century, building sustainable development, creating jobs, generating renewed economic growth and advancing human welfare'" (World Economic Forum, 2009, p. 7). (p. 2)

"Entrepreneurship refers to an individual's ability to turn ideas into action and is therefore a key competence for all, helping young people to be more creative and self-confident in whatever they undertake" (World Economic Forum, 2009, p. 9) (p. 3).

"We have an education system that was created around the time of the Industrial Revolution when we needed to turn rural kids into urban employees capable of working in assembly line, mass-market factories. As a result, we ended up with a school system focused on rote memorization ad measureable, predictable results" (Strauss, 2006) (p.7).

p. 8 – References The Global Achievement Gap by Tony Wagner

"Entrepreneurship is fundamentally about the desire to solve problems creatively. The foundation of entrepreneurship – creativity, curiosity, imagination, risk taking, and collaboration – is, just like the ideas of engineering, 'in our bones and part of our human nature and experience.'" (p. 9).

"Countries that show a low level of entrepreneurship are countries that have been high performers on international tests" (p. 11).

"Figure 0.2 Ranking by PISA Math Score and Perceived Entrepreneurial Capability p. 12

"It does suggest that education systems that produce good test scores more often than not have lower entrepreneurship activities and capabilities. It also suggests the possibility that the mechanisms that lead to higher test scores could lead to lower levels of entrepreneurship" (p. 13).

"The United States has seen a significant decline in creativity among its youth over the past two decades, which coincides with its waves of educational changes to boost student test scores" (p. 13).

"Teachers claim to value creativity in children, but in fact it is proven that they generally dislike creative behaviors and characteristics in the classroom because they are inconvenient and hard to control" (Britannica Editors, 2010b) (p. 14).

"High school students who exhibit creative personalities are more likely to drop out of school than other students" (Britannica Editors, 2010b) (p. 15).

"A well-prepared citizen of the future needs to be creative, entrepreneurial, and globally competent" (p. 15).

"Evidence suggests at least that tightly controlled standardized curriculum, a uniformly executed teaching approach, narrowly prescribed and carefully planned learning activities, and rigorously watched and frequently administered high-stakes tests do not produce creative and entrepreneurial talents, although they may lead to higher test scores" (p. 16).

"To prepare global, creative, and entrepreneurial talents, that is, everyone in the future, education should at first not harm any child who aspires to do so or suppress their curiosity, imagination, and desire to be different by imposing upon him or her contents and skills judged to be good for him or her by an external agency and thus depriving of the opportunities to explore and express on their own" (p. 17).

"The most desirable education, of course, is one that enhances human curiosity and creativity, encourages risk taking, and cultivates the entrepreneurial spirit in the context of globalization" (p. 17).

Chapter 1 – The Wrong Bet Why Common Curriculum and Standards Won't Help

"The Common Core State Standards Initiative represents the increasing trend of national homogenization of student learning in the world. The homogenization is achieved through increased national control of what children should learn. Such control is exercised through three interconnected measures: 1) the identification of core subjects, 2) the development of centralized curriculum standards, and 3) the use of high-stakes testing to enforce standards of core academic subjects" (p. 27).

"The attempt to homogenize children's learning goes beyond national borders and is becoming global. International benchmarking, that is 'the alignment of standards, instruction, professional development and assessment to those of the highest-performing countries' (Education Commission of the States [ECS], 2008, p. 5), has become the buzzword among educational reformers around the world" (p. 31).

"International benchmarking has effectually the result of developing a globally homogenous learning experience for all students. This push toward a globally homogenous education has one obvious rationale: global competition" (p. 32)

"The best employers the world over will be looking for the most competent, most creative, and most innovative people on the face of the earth and will be willing to pay them top dollar for their services. This will be true not just for top professionals and managers, but up and down the length and breadth of the workforce. Those countries that produce the most important new products and services can capture a premium in world markets that will enable them to pay high wages to their citizens" (The New Commission on the Skills of the American Workforce, 2007).

"By becoming an international standard, PISA has the direct potential for determining the curriculum content in the areas tested, which are mathematics, reading and science" (Spring, 2008, p. 62) (p. 34).

"It has also been argued that the core curriculum only prescribes the essential knowledge and skills and should be the foundational knowledge and skills a child needs, thus it is not the ceiling, rather the floor" (p. 37).

"Curriculum narrowing happens on two levels. First, when high stakes are attached to a limited number of subjects, they take precedence over other subjects (p. 37). The second level of curriculum narrowing happens within the 'favored' subjects. Teaching to the test and learning to test, that is, teach and learn only what is likely to be tested, in the formats most likely presented on the tests, have been frequently observed around the world" (p. 38).

"Studies found that since the implementation of NCLB, rigid curriculum objectives and mechanistic preparation for state standardized testing hijacked curricular diversity and pedagogical exploration and flexibility" (p. 40).

"The dominant paradigm of modern mass education has been about producing employees with similar skills to meet the demand of the local economy and a common citizenry with similar values compatible with the local society. The primary function of this paradigm has been to reduce human diversity into skillful workers through prescribed content and experiences in the form of curriculum" (p. 42).

"The world is drastically different now. Geographical distance and political boundaries no longer divide the world in terms of economical activities. Virtually all economies are globally interconnected ad interdependent. Employment opportunities are thus no longer isolated to specific locations" (p. 42).

"The hourly compensation costs in manufacturing in 2010 varied from $1.90 in the Philippines to $57.53 in Norway, according to data released by the U.S. Bureau of Labor Statistics in 2011" (Bureau of Labor Statistics, 2011) (p. 43).

"Here lies the first problem of the global homogenization of learning. If all children are asked to master the same knowledge and skills, those who cost less will be much more competitive than those who cost more. There are many poor and hungry people in the developing world willing to

work for a fraction of what workers in developed countries need. Thus for those in developed countries to be globally competitive, they must offer something qualitatively different, that is something that cannot be obtained at a lower cost in developing countries. And that something is certainly not great test scores in a few subjects or the so-called basic skills, because those can be achieved in the developing countries" (p. 43).

"Schools have to prepare students for jobs that have not yet been created, technologies that have not yet been invented and problems that we don't know will arise" (Schleicher, 2010) (p. 44).

"Jobs that require routine procedure skills and knowledge are increasingly automated or sent to places where such skills and knowledge are abundant with lower cost. As a result, as best-selling author Daniel Pink observed, what will be of more value is traditionally neglected talents, which he refers to as right-brain directed skills, including design, story, symphony, empathy, play, and meaning" (Pink, 2005) (p. 44).

"To be ready to live in this global world requires the knowledge and abilities to interact with people who are not born and raised in the same local community. But the core curriculum of most nations does not include an element to prepare the future generations to live in this globalized world and interact with people from different cultures" (p. 44).

"Globalization vastly expands the pool of potential customers for products and services. Niche talents that used to be of only interest to a small fraction of people may not be of much value locally because the total population is small in a given community. In the globalized world, the potential customers could be seven billion people" (p. 45).

"Globalization and technology today enables products and services to reach almost any corner of the world. But the traditional paradigm, by forcing children to master the same curriculum, essentially discriminates against talents that are not consistent with the prescribed knowledge and skills" (p. 45).

Chapter 2 – The Changed World The Need for Entrepreneurs

"The average open position today around the world is getting between 75 and 1,000-plus resumes. So you have at any one time less than a 1 per cent chance of getting that employment opportunity" (Wilson, 2011) (p. 50).

"According to a 2011 study by the John J. Heldrich Center for Workforce Development of Rutgers University, only 53% of those who graduated from college between 2006 and 2010 hold full-time jobs" (Godofsky, Zukin, & Horn, 2011) (p. 51).

"Almost half of the 7 billion people (in the world) are 24 years old or younger, with 1.2 billion between the ages of 10 and 19, according a United Nations Population Fund Report published in 2011" (p. 54).

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"Digital technologies have freed us from being constrained by the physical aspects of our world. As a result, physical co-location and presence have become nonessential for many human activities" (p. 55).

"Today, there are over 240 million people living in a country in which they were not born" (p. 57).

"While an increasing number of traditional jobs will be lost due to increased productivity, many more jobs can be created because more people will have the income to consume more and more diverse products and services" (p. 61).

Book – Wikinomics: How Mass Collaboration Changes Everything by Don Tapscott and Anthony Williams p. 65

"Only about 10% of Americans had jobs that lasted 20 or more years, according to research by the Employee Benefits Research Institute during the period from 1983 to 2008 (Copeland, 2010). The same study found that the median job tenure for the lowest age group (25-34) has been hovering around two years since the 1960s, and about nine years for the highest for those aged 55 to 64). The median for all age groups has been about four years" (p. 67).

Chapter 3 – What Makes an Entrepreneur: The Entrepreneurial Spirit

"Intrapreneur – a person within a large corporation who takes direct responsibility for turning an idea into a profitable finished product through assertive risk-taking and innovation." (p. 78)

"People who seek to initiate dynamic policy change are policy entrepreneurs." (p. 80)

"Entrepreneurship is about growth, creativity and innovation. Innovative entrepreneurs come in all shapes and forms and their impact is not limited to start-ups – they also innovate in the public, private, academic and nonprofit sectors. Entrepreneurship refers to an individual's ability to turn ideas into action and is therefore a key competence for all, helping young people to be more creative and self-confident in whatever they undertake". (World Economic Forum, 2011, p. 5) (p. 81).

"With some variations in the terms used, these characteristics – inspiration, creativity, courage, direct actions, and fortitude – have been generally identified as personal attributes of entrepreneurs by researchers of entrepreneurship. Other terms that have been used to refer to the qualities of entrepreneurs include alertness to opportunities, foresight, ambition, passion, confidence, innovation, risk taker, creativity, social networker, and persistence". (Kent, 1990; Rabbior, 1990) (p. 82).

Michele McCurdy

"While nature provides the potential, the environment affects to what degree and which potentials are realized, as well as what talents are suppressed and thus not fully developed. Families, friends, and schools all affect how one turns out to be. A person may have a strong inclination for entrepreneurship, but if he is not given the opportunity to learn or in worse cases, if it is forbidden, the person's entrepreneurial talent cannot be developed". (p. 85)

"Educational institutions at all levels (primary, secondary and higher education) need to adopt 21st century methods and tools to develop the appropriate learning environment for encouraging creativity, innovation and the ability to think "out of the box" to solve problems." (p. 95)

Chapter 4 – Achievement Gap vs. Entrepreneurship Gap: The Myth of Education Giants

"When you're very structured…all the creative elements seem to disappear. (BBC, 2011) (p. 103)

"Countries that have higher PISA scores have lower entrepreneurship activities." (p. 106)

"Finnish students do not take standardized tests until the end of high school. Finnish schools are a standardized-testing-free zone, according to Pasi Sahlberg in his book Finnish Lessons: What Can the World Learn From Educational Change in Finland?" (Sahlberg, 2011). (p. 111)

"Diane Ravitch observed, 'the central aim of Finnish education is the development of each child as a thinking, active, creative person, not the attainment of higher test scores, and the primary strategy of Finnish education is cooperation, not competition'" (Ravitch, 2012) (p. 111).

Chapter 5 – China vs. the United States: How the Best Education Stifles the Entrepreneurial Spirit

"The most entrepreneurially talented and creative suffers the most because they are more likely to have an unbalanced genetic predisposition for things other than the academics. They are the potentially great musicians, artists, sportsmen, entrepreneurs, and scientists who are just not good at taking tests and studying the school subjects. They have so much potential in one area that it is difficult for them to have the interest, the patience, or ability to do well in traditional academics. As a result of their poor performance in academics or their unwillingness to play the academic game, they are put into lower-quality schools or classes (tracks), kicked out of schools, or they may simply choose to drop out". (p. 128).

"Asking questions, challenging the status quo, and risk taking are the hallmarks of entrepreneurial and creative ventures, which are in direct conflict with the spirit of standardized tests". (p. 128)

"When children spend all their time studying, they cannot have much time socializing or engaging in team activities that may provide the opportunity to learn to fail, to interact with

others, to develop one's identity, to understand one's interests, and to develop social skills – all important qualities of entrepreneurship." (p. 128)

"When children are judged by a single criterion, they are constantly asked to compare with their peers. They are ranked all the time and in public. They are rewarded or punished accordingly. The result is most children will be worse than the few top performers in the class, school, or city. Thus the majority of children learn to internalize a sense of inferiority and eventually lose self-confidence." (p. 129)

"In its quest for a better education that could produce great creative entrepreneurs like Steve Jobs, China has turned its attention to the Unites States, the country that produced most Nobel laureates, dominated in the number of modern-day innovation, and seen the birth of the largest collection of influential entrepreneurs. While the Americans have been lamenting on its education, the Chines have been working hard at emulating it. What has been condemned in the U.S. education system seems to be precisely what the Chinese wish to have". (p. 130)

"When a society allows and encourages everyone, regardless of his class and occupation, to become an expert in their own way, it is certain that human potentials can be maximally realized, and consequently there is fertile soil for cultivating individuality. And more importantly, only in these soils can we cultivate children who can express their individuality and dare to follow their own ambitions and only then can they truly become 'themselves.'" (p. 132)

"What the Chinese find valuable in American education is a decentralized, autonomous system that does not have standards, uses multiple criteria for judging the value of talents, and celebrates individual differences." (p. 133)

"The lack of a laser focus on education or rather schooling means American children are not pressured to spend all their time on studying the prescribed curriculum. They thus have more access to and can spend more time on non-school activities – music, art, sports, carpentry, glass-blowing, debate, and many other activities of their liking – that may not have much to do with academics or college readiness. As a result, American children have more opportunities to explore what they may be good at. But at the same time, they are not spending as much energy on the school subjects or what is tested. Naturally they won't be as good as those who spend more time one these subjects". (p. 135)

"The 'play time' American students have, that is time spent hanging out with friends, playing video games, managing lemonade stands, working at a gas station, and selling Girl Scout cookies, may not do much in helping with their mastering the academic content, but it helps them learn to socialize, manage relationships, an be responsible and independent". (p. 136)

"The independence and social skills American children develop give them a huge advantage when they join the workforce. They learn to experiment, challenge norms, and take risks. They

can think for themselves, and they can innovate. This is why America remains the world leader in innovation." (Wadhwa, 2011) (p. 137)

"When one is taught to conform, it will be difficult for him to be creative. When one is punished for making mistakes, it will be hard for her to take risks. When one is told (their) wrong or inadequate all the time, it will be difficult for her to maintain confidence." (p. 139)

"A well-organized, tightly controlled, and well-executed education system can transmit the prescribed content much more effectively than a system that is less organized, loosely monitored, and less unified. In the meantime, a less organized system has more room for individual exploration and experimentation and allows exceptions. The question is then what matters in the future. Do we want individuals who are good at taking tests or individuals who are creative and entrepreneurial?" (p. 139) – Reminds me of teaching a new topic the first time and it not working out and the teacher and class have to experiment on the fly to figure out what next verses the rest of the classes through the day who get an already figured out lesson. Which class gets the opportunity to "see and experience" thinking and problem-solving at work.

Chapter 6 – From Accident to Design: A Paradigm Shift

p. 145 – lists famous dropouts

"The mass-production economy needed a large workforce with similar skills and knowledge, but at very basic levels. There was no need for the majority of individuals to be inventors or entrepreneurs." (p. 146)

"To educate the masses with similar basic knowledge and skills requires a common curriculum, or a prescription of the skills, knowledge, talents, and abilities that must be taught in schools so as to prepare children to function in society." (p. 146)

"The traditional paradigm or the employment-oriented paradigm is about reducing human diversity into a few desirable skills. A well-educated, employment-oriented education in the process of forcing conformity and imposing uniformity is also very successful in weeding out those unwilling or unable to conform. They become outcasts and dropouts, and are rendered to lower-status, lower paying jobs, or even no jobs." (p. 149)

"America's success in creativity is the outcome of its ineffectiveness in forcing conformity and standardization. It has more room for outcasts to survive, and such room results in lower performance on single measures such as test scores." (p. 150)

"The idea of 'career ready' is but a fancy dream, when one does not know what careers will exist when a child leaves school." (p. 151)

"Great creative people are not accidents, but they are deliberately cultivated and supported. (p. 152)

"Constructivist psychologists have brought abundant evidence to show that children are unique learners with unique needs and backgrounds and actively construct knowledge based on their previous experiences instead of passively receiving it (Glasersfeld, 1989)." (p. 155)

"Good education should aim to meet each child's unique needs, capitalize on each child's strengths, and grant the child autonomy so he or she can take the responsibility for learning." (p. 156)

"It is, however, very difficult to abandon the traditional educational paradigm for something new, not only because we have been used to it and there are complex social and economic institutions closely tied with its operations, but also because it has features that hold tremendous appeal to the human nature: our naturally evolved desire for orderliness, control, competitive advantage, and short-term or immediate tangible results." (p. 160)

Chapter 7 – Freedom to Learn: Student Autonomy and Leadership

"The teacher is not in the school to impose certain ideas or to form certain habits in the child, but is there as a member of the community to select the influences which shall affect the child and to assist him in properly responding to these influences. ~ John Dewey" (p. 165)

"Only when children learn what they want to learn and begin to take the responsibility for learning and living can they stay truly engaged. When they are forced to learn something they don't see as relevant, no matter how important adults believe it will be for their future, children may simply go through the motions as best, and become disengaged and drop out at worst." (p. 171)

"Excessive focus on external indicators of success such as grades and test scores can pressure children, sending the message that academic success is important, not for personal reasons, but to please others (Ablard, 1997)". (p. 174)

"Creative entrepreneurs are passionate individuals who capitalize on their strengths rather than spending time making up for their weaknesses. Driven by passion and given the freedom, they can construct their resources to enhance what they are good at instead of wasting efforts to become like others." (p. 175)

"Animals exposed to complex environments outperform those in impoverished environments. They perform better in cognitive tasks (Hebb, 1947) and have more synapses per neuron and brain plasticity (Beckett et al., 2006,; Briones, Klintsova, & Greenough, 2004; Rampon et al., 2000; Renner & Rosenzweig, 1987; Rosenzweig & Bennett, 1996; Sirevaag & Greenough, 1987)". (p. 177)

"Depriving children of the opportunities to be exposed to arts, music, field trips, and sprots in order to focus on the prescribed and assessed curriculum leads to an impoverished education". (p. 178)

"Schools should have flexible space – for group as well as individual work, for large meetings as well as individual pursuit, and for instructor-led activities as well as student-initiated independent activities." (p. 179)

Chapter 8 – Product-Oriented Learning: Works That Matter

"All genuine education comes about through experience does not mean that all experiences are genuinely or equally educative. ~ John Dewey" (p. 189)

High Tech High Mission – "to prepare students – all kinds of students – to be savvy, creative, quick-thinking adults and professionals in a modern world" (Rubenstein, 2008) (p. 193)

Chapter 9 – The Globe is Our Campus: Global Entrepreneurs and Enterprises

Chapter 10 – Create a World Class Education: Principles and Indicators