



# Fostering Innovation through Transforming Education

*An effective solution that brings the United States back into economic prosperity.*

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Do years of schooling really matter? Do they result in better social and economic opportunities? We have always heard from our parents that if we want to succeed in life, we have to study hard and graduate from college. Are they right? Let's look at the facts:

- A master's degree or higher earns on average \$56,000 per year.
- Those without a high school diploma earn \$22,000 or less<sup>3</sup>.

The U.S. high school graduation rate is approximately 75%.  
25% of the population earns \$22,000 or less.

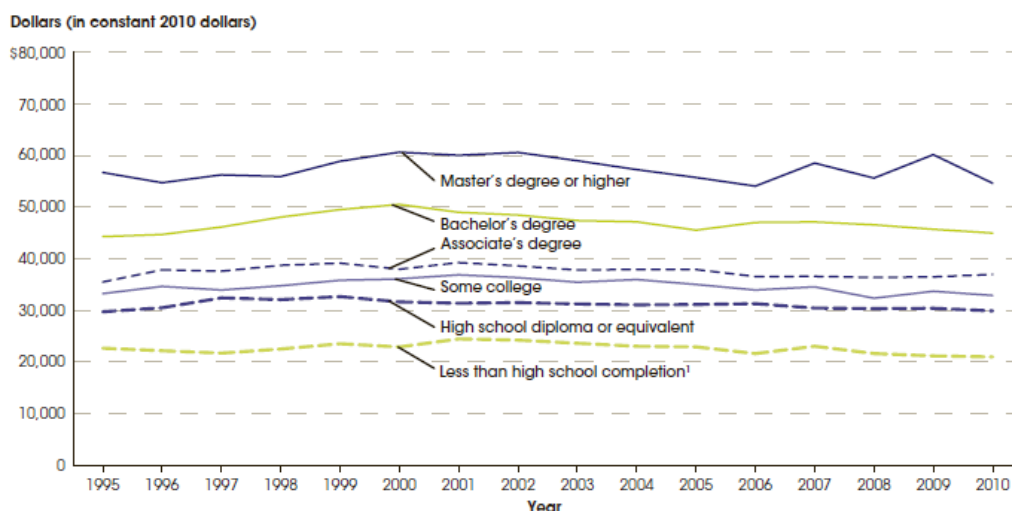


Figure 1 – Median annual earnings of full-time wage and salary workers, ages 25-34, by educational attainment: 1995-2010<sup>4</sup>

Years of schooling increases the potential of higher earnings. In 2001, Robert Barro, a leading education and economic researcher concluded that if all students of a country attend one additional year of education, its Gross Domestic Product (GDP) can increase by 0.44% per year. Along the same research, Hanushek and Woessmann (2008), and Barro (2001) determined **more important than years in school is the quality of learning**. They concluded that quality and cognitive skills result in a powerful economic growth opportunity, enabling countries to reach one full percentage point per year in GDP increase.

## How does quality education and cognitive skills generate a better GDP output?

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<sup>3</sup> Condition of Education 2012 Report, National Center for Education Statistics.

<sup>4</sup> Source: US Department of Commerce, Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplement, 1996-2011.



Cognitive skills enable individuals to acquire knowledge through thought, experience, and the senses. These skills include reasoning, perception, and intuition. They are fundamental to integrate newly acquired information into what human beings learn throughout their lives.

Innovation uses these cognitive skills to create new processes and new ways of performing tasks. An essential element for innovation is its application in a commercially successful way, which consequently, can contribute to more employment, more taxes paid, and more economic growth.

A quality education fosters cognitive skills where knowledge is built without gaps. It allows the freedom to create new processes and procedures according to students' capabilities. It is the powerful combination of quality of learning along with key cognitive skills, which eventually, generate innovation and economic growth for the individual, community and country.

### How innovation has contributed to the world's economic growth?

Innovation has changed human history. Robert Gordon (2012) plots the economic growth since the fourteenth century that depicts the history of innovation impact on the GDP. For four centuries there was no economic growth in the world. It started with the industrial revolutions as of 1706. The blue line represents the United Kingdom's (U.K.) economic growth until the U.S. caught up (red).

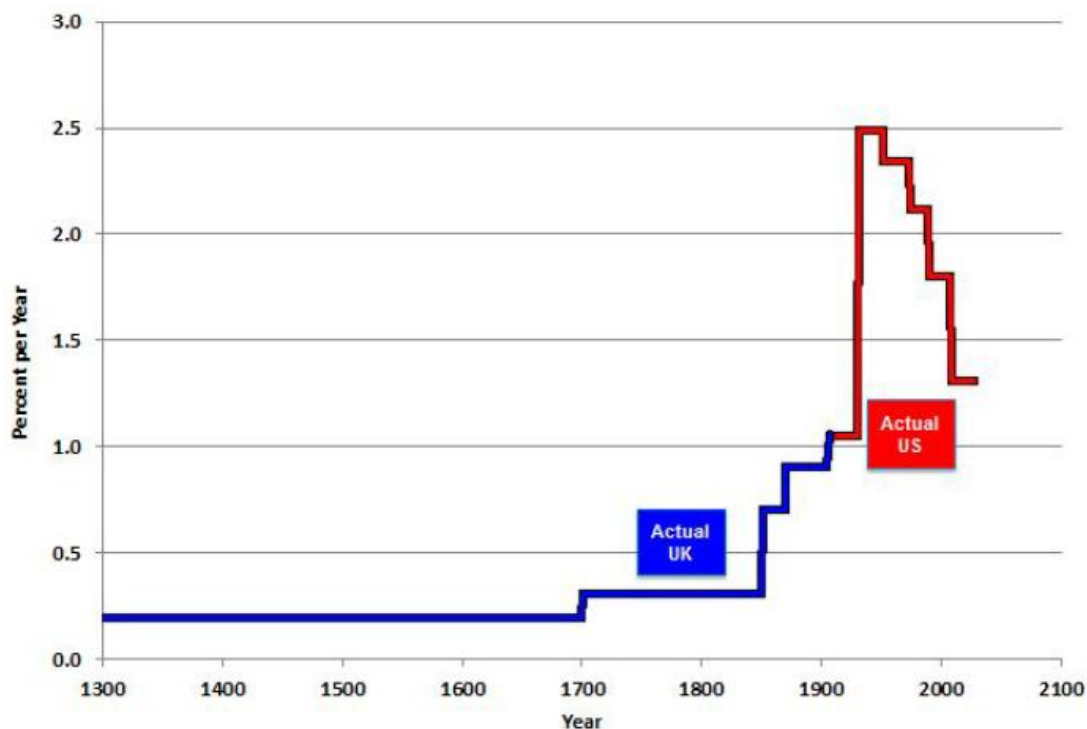


Figure 2 – Growth in Real GDP per capita, 1300 - 2100

The world has experienced three recent industrial revolutions:

1. 1750 and 1830: The invention of steam engines, cotton spinning, and railroads.
2. 1870 and 1900: The invention of electricity, internal combustion engine, and running water with indoor plumbing
3. 1960 to today: The computer and Internet revolution.

Each of these eras was identified because of the unique improvements provided only once. Light, combustion engine, and Internet are all one-time inventions. After that, many sub-products have been created because of them. Thus, the impact on economic growth is significant in each era. It took a cycle of approximately 100 years for us to experience the full impact of the first two industrial revolution eras, whereas now it is much faster. Nevertheless, the impact of the first two eras is incredibly more significant than the third, which contributes to the downward shape of the graph above as of mid-1900.

We can still see the productivity impact of the second industrial revolution era in the early 1900's. More recent inventions are less impactful on labor-saving; they focus on entertainment and communication devices. This is demonstrated on the following graphic where productivity trends were analyzed based upon the impact of inventions. If we continued with the 1948-72 productivity trends, our output per hour would be much higher than the current.

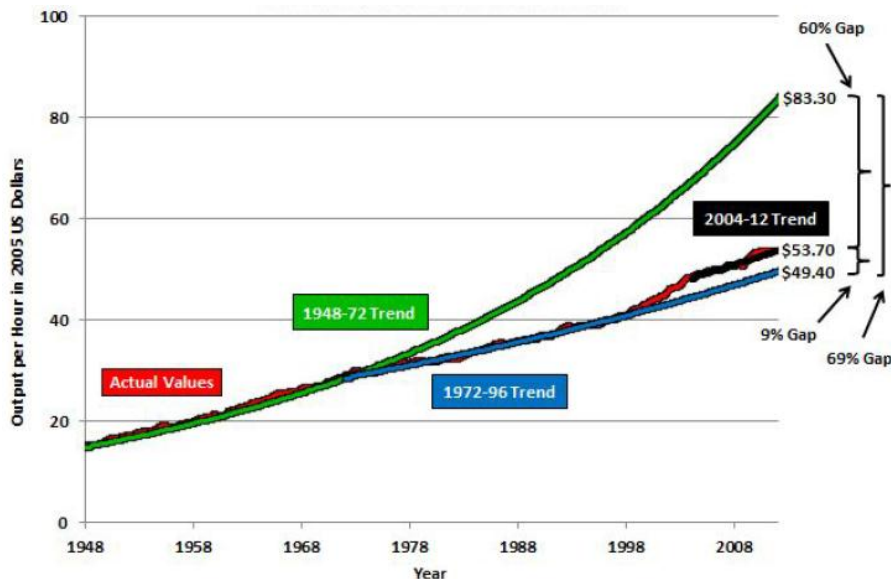


Figure 3 – U.S. Labor Productivity from 1948:1 to 2012:1, with Trend Growth Rates over Selected Intervals<sup>5</sup>

In his research, Gordon (2012) illustrates the fundamental importance of the inventions in industrial eras one and two compared to era three. If you could choose between (A) keep your 2002 technology, running water, and indoor toilets; and (B) give up running water and indoor toilets and keep your 2012 technology including Facebook, and iPad. Which one is your option?

<sup>5</sup> Gordon, 2012

We can recognize that the early inventions were all more relevant in our lives than the late 19<sup>th</sup> century inventions. It does not mean that current inventions do not have their place. Industrial revolution will continue, but at a much slower pace. We will see this reflected on economic growth, which will continue to curb unless we foster real innovation.

### Context of the US Education

In 2009-2010 the U.S. was ranked 2<sup>nd</sup> on the Global Competitive Index. In 2010-11 it was 4<sup>th</sup> and in 2012-13, it ranked 7<sup>th</sup>! The trend is simply alarming.

In 1972 the U.S. ranked 1<sup>st</sup> in quality of public education and was first in the Global Competitive Index. Investment per student was less than \$5,000 per year! Currently, the cost per student is approximately \$11,000, which represents 4.1% of GDP. Yet, **the U.S. is ranked 38<sup>th</sup> in Quality of Primary Education according to the World Economic Forum's (WEF) Global Competitiveness 2012-2013 Report.** It was 34<sup>th</sup> in the WEF's 2011-2012 Report.

The US Department of Education predicts an increase cost per student in 2020 by 22% in total expenditures from 2008 to 2020. As much as 69.2% of the budget goes to salaries and employee benefits, 28.1% pays debts, and 2.7% goes to other investments, as reported in the Condition of Education Report, 2011. The No Child Left Behind (NCLB) 2001 Act was the nation's hope to increase students' performance and quality of education, and decrease inequalities. By 2010, 38% of schools were failing to make adequate yearly progress, up from 29% in 2006. In 2007, one out of four schools failed to show improvements, 50% of 9<sup>th</sup> grade students dropped out.

In 2011, U.S. Secretary of Education Arne Duncan, as part of his campaign to get Congress to rewrite the law, issued dire warnings that 82% of schools would be labeled "failing" that year. The numbers did not turn out quite that high, but several states did see failure rates over 50%. In Florida, it was 89%. President Obama said that we are experiencing "an achievement gap that by one estimate, costs us hundreds of billions of dollars in wages that will not be earned, jobs that will not be done, and purchases that will not be made."<sup>6</sup> Better educated citizens will yield higher income, pay more taxes, spend more, and borrow more, creating an economy that is sustainable.

These results reflect what the U.S. National Commission of Excellence in Education reported in 1983, in its article "A Nation at Risk": *"Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world. This report is concerned with only one of the many causes and dimensions of the problem, but it is the one that undergirds American prosperity, security, and civility. We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. What was unimaginable a generation ago has begun to occur-- others are matching and surpassing our educational attainments."*

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<sup>6</sup> <http://www.whitehouse.gov/the-press-office/remarks-president-department-education>

The World Bank and the International Monetary Fund predict that China will surpass the U.S. GDP by 2015, becoming the largest economy in the world. It just highlights how innovation is stalled in the U.S. It is a reflection of the challenges the country faces in education.

The current administration is aware of the challenges. Yet, there is little direction as to where we should go as a nation to resolve this major issue. We are failing to prepare our students adequately to compete at the global level as an economic power.

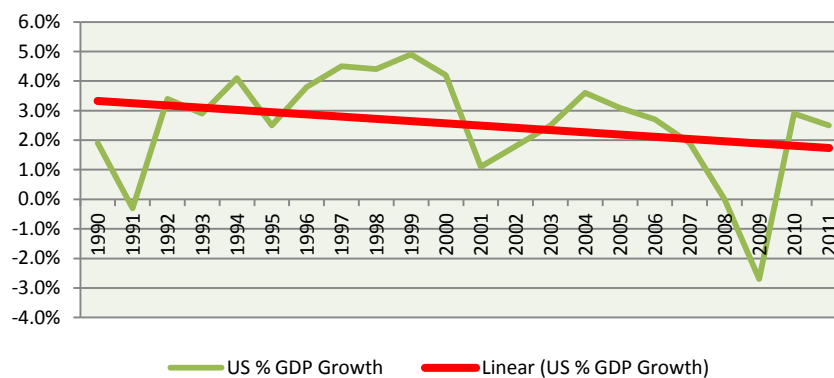


Figure 4 – US GDP from 1990 to 2011

Something needs to change significantly for the U.S. to keep its economic prosperity. Quality of education and cognitive skills have a greater chance to positively transform this reality in the medium and long term. An efficient education system enables students to innovate and be more productive, making time the variable and achievement the constant, and eliminating gaps in knowledge that can lead to economic challenges for students and for the country.

### Transforming Education

There are many theories on how to improve our education outcomes: increase in-school hours, increase teachers' compensation, introduce technology, and so on. Superficially, these ideas all carry merit, but most only involve investing on old concepts. Unless we change the essence of the learning practice, we will not succeed. That is exactly what Learning One to One does – we are transforming education.

### What We Do Differently

Learning One to One Foundation provides comprehensive, scalable, whole-school reform using Fontan Relational Education (FRE), a proven pedagogy model that focuses on developing cognitive skills along with intellectual, personal, and socio-emotional skills. FRE is a pedagogy model that customizes learning paths for different learners at an individual level based on students' abilities and interests, relating everything they learn to their own reality while using technology as the platform for personalized learning. It is supported by one-on-one academic guidance and a one-to-one computer system based on cloud (on-line) technology that efficiently coordinates and engages students, school staff, parents and guardians, counselors, administrators and student achievement.

### **Why Fontan Relational Education Works**

FRE is called “Relational” education because students move to the next topic in all subject areas only when they are able to “relate” everything they learn to their daily lives, increasing knowledge retention and their chances to succeed academically, developing true cognitive skills. Previous experience validates that FRE works equally well with students with disabilities, allowing them to perform as any student. Public schools using Fontan Relational Education have improved performance in as little as one year after adopting FRE.

A personalized learning increases the success rate because it focuses on developing the specific potential of each student and creates a path for a life-long learning experience. It reflects what the word education really means from Latin: *to bring out from within*. Students practice every day, for 12 years, to achieve excellence in everything they do, to never leave gaps and always find meaning in what they learn. This will be reflected in their adult lives making them better professionals, better family members, and better citizens. The quality of their lives is directly linked to their relationship with the world.

Fontan Relational Education develops key 21<sup>st</sup> Century skills that enable students to highly perform in the global world. These **entrepreneurship skills** are naturally developed and practiced during their academic experience:

- **Autonomy:** Students are supported by educators on the development of their intellectual and personal autonomies.
- **Solution of Real-World Problems:** Student’s work is based on constantly solving problems of their lives and their communities.
- **Planning:** Students plan their hourly and daily schedules, in agreement with their educators and respecting their Student Learning Plan.
- **Effectiveness:** Students develop the ability to search for resources, manage the various available tools, and administration of their own time.
- **Critical Thinking:** Students build processes from questions.
- **Decision Making:** Students decide upon various elements of their working plan.
- **Responsibility and Accountability:** Students learn to accept consequences of own decisions.
- **Leadership:** Students join others in a proactive and daily activity, supporting the community in their “expertise.”
- **Excellence:** Students must achieve excellence to move to the next topic and grade level.
- **Creativity:** It is the only path to answer questions.
- **Relevant Learning:** The development of individual potential is achieved through personalized Student Learning Plans.
- **Technology Enabled:** Students use technology as the main learning tool and are opened to the world.
- **Collaboration:** Students work requires peers and educators to reach excellence.

By practicing every day in everything students do, these skills become a natural way of living.

### **Fontan Relational Education Effectiveness**

The FRE pedagogy model implementation is an exceptional approach and the answer the education challenges the U.S. faces because it provides true school reform. Students move from curriculum receivers to actors of their learning experience. Students are respected for their differences so their

potential is explored at its maximum, enabling them to be successful both academically and in their lives. The impact extends beyond academic performance, including aspects such as: drop-out rates decrease, there are no failures, educators effectiveness increase, and financial performance of the education system is more efficient.

### **Success Track Record**

FRE has been successfully utilized for more than five decades in various schools. It won various awards in the last 27 years, among those:

#### *2011 Microsoft Innovative School Award*

One of three global schools noted for its pedagogy model and use of technology.

#### *1999 Colombian Democracy Order in the Degree of Commander*

From the Colombian House of Representatives. Award given due to outstanding results achieved in its application of traditional formal education system and environments of adverse poverty and violence.

#### *1994 Recommended by the Colombian Science, Education and Development*

Mission for the Future of Colombia.

### **How it Works**

Under a specific school or an entire school district request, Learning One to One Foundation provides expert guidance for whole-school reform, teacher, parent, and student training to adopt FRE, an on-line app that enhances the students learning experience, and continuous support to improve academic and technology performance every day. FRE evolves every year, allowing educators to be prepared for students learning requirements in this never-ending transformation in the world.

### **Measuring Success**

The University of Miami, School of Education and Human Development (UM) is committed to systematically study, enhance, develop training tools, and support the adaptation of the FRE to serve as a best practice model. Evaluation includes key performance indicators based on the students' academic autonomy, quality of education, surpassing curriculum standards, students' work rhythm and personalized learning plan accomplishment.



## Florida Impact

Specifically in Florida, 14.5% of the population has no high school diploma, 51% has up to a high school diploma, 25.4% has a Bachelor's degree or equivalent, and 9.2% has a graduate or professional degree<sup>7</sup>. In 2012, the state decided to lower the FCAT (Florida's Comprehensive Assessment Test) passing score to ensure more students could pass<sup>8</sup>.

Approximately 24% of Florida's population is foreign born, out of which, 75% are Latin Americans. This is a threat to the state's education attainment, as an average of 30.7% of the dropouts born outside of the U.S. is Hispanic<sup>9</sup>. According to the American Census Bureau, Florida's population growth trend is significant due to immigration. Florida is only behind Texas and California. This can be an advantage or disadvantage to our growth. If we are able to provide quality education to our citizens, Florida has a tremendous opportunity ahead, to become a state that provides outstanding results to the state's economy. If we continue our current education trend, we can only expect less than average results.

This is our reality. Demographics do influence the economy. Provided that there is work, a young population will make the state productive. We have the opportunity to explore and realize the potential of our citizens today. It starts with your decision to partner with learning One to One Foundation, which in turn, will provide the transformation in education that can improve economic outcomes to individuals, companies, the state, and the country.

## BE PART OF IT! TRANSFORM EDUCATION!

Warned out loud in the "Nation at Risk" report of 1983: *"If only to keep and improve on the slim competitive edge we still retain in world markets, we must dedicate ourselves to the reform of our educational system for the benefit of all – old and young alike, affluent and poor, majority and minority."*

We seek partners to take part in this transformative journey, to embrace it, support it and celebrate together with us in its success. We are eager to work with your organization and its goals – whether public, private and participative. Our objective is clear: to improve education. We strive for excellence in everything we do. Join us on transforming education in Florida, the United States, and beyond.

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<sup>7</sup> Source: U.S. Census Bureau, 2007-2011 American Community Survey

<sup>8</sup> [http://www.huffingtonpost.com/2012/05/23/florida-lowers-passing-fc\\_n\\_1539675.html](http://www.huffingtonpost.com/2012/05/23/florida-lowers-passing-fc_n_1539675.html)

<sup>9</sup> The Condition of Education 2012 Report

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