Digital Learning Solutions, LLC
Part of the Global Learning Group

Why Transform Learning?
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Introduction

Education is part of life and it is a lifelong process. It should be fun and challenging… not boring. If you are as passionate as I am about children's education, technology, eLearning, and collaborative learning then this paper is a must read for you.

In 2005 Bill Gates called secondary schools an outdated/obsolete tool for the training of tomorrow's workforce. He went on to say "By obsolete, I mean that our high schools – even when they're working exactly as designed – cannot teach our kids what they need to know today ….Training the workforce of tomorrow with the high schools of today is like trying to teach kids about today's computers on a 50-year-old mainframe. It's the wrong tool for the times".

Educating our children and transforming the way we educate them is a very complex problem. Let me begin by saying that the "System" has not changed to cater for the needs of the child of the digital age and remains predominantly the same as it was for me the child of the industrial age.

This paper about,"Why Transform Learning?", will examine the current state of learning and why it is important to take into account learning styles in designing curriculum. I will then discuss current learning trends and how Networks of learning and Disruptive innovation, and not e-learning as we know it today,can make a difference in dispersing learning.

(Albert Einstein)"*The only thing that interferes with my learning is my education*"

Current State of Learning

Much of our system of education is locked in a time capsule that dates back to the Industrial revolution, when learning became an exercise in pumping as much information into kids as possible. At the end of this education assembly line comes a certificate or degree assuming the student can regurgitate the facts correctly in atest/exam. But in an era where technology can deliver most of the world's information on demand and knowledge is changing at a rapid pace, the model doesn't work. We continue to use textbooks that students use, during the year, only to realize that the information,in most instances, is obsolete soon after it is printed?

We hear about these criticismsin our education system globally. However, it is important to understand some major differences between the views of the over 40, the "Digital Immigrants" and the under 40, the "Digital Natives" (W. Veen).

Digital Natives	Digital Immigrants

Twitch speed	Conventional speed
Parallel processing	Linear processing
Random access	Linear thinking
Graphics first	Text first
Connected	Stand alone
Active	Passive
Play	Work
Payoff	Patience
Fantasy	Reality
Technology as a friend	Technology as foe

The research I have recently conducted supports the characterization from the table above. There is a growing awareness of this difference but still, most educators, politicians support or adhere to a paradigm of education that is and was designed for me, the child of the Industrial age.Our challenge is to reinvent "SCHOOLS" in this Digital age.

Over the past decade eLearning has gained acceptance amongst many schools and the number of enrollments has grown exponentially but it still does not meet the needs of the child today because, in most instances, it is one-way consumption based, rather than being collaborative.

There are several School districts in the USA who have spent a great deal of timeand resources to invest in technology such as Smart Boards, cameras, touch panel computers and allocating notebook computers to all enrolled students in middle and high school. In doing so the educational institutions claim that they have made the shift to this digital/information age but I would argue otherwise. In most instances it has perpetuated the old method of instruction that is text book-driven, teacher-centered, paper-and-pencil schooling. The use of these devices, in the classroom, is limited to the lecture type instruction with the exception of giving homework assignments and receiving them on-line. Instead, they need to use this technology to help students learn in ways that are customized to their way of learning.

Twenty years ago I could see that digital technology was going to completely revolutionize the educational system, whether we liked it or not. Yet, in light of extraordinary advancements in how we use technology to communicate and learn, our schools and school districts have been frustratingly slow to adapt. I believe that there is a lack of conviction on the part of policy makers and others in transforming the system.

(Carl Rogers)"*I believe that the testing of the student's achievements in order to see if he meets some criterion held by the teacheris directly contrary to the implications of therapy for*

significantlearning".

Learning Styles

Research on learning styles began as early as the 1970's with Hill's (1972) educational science work, Dunn(1982), Kirby (1979), Knaak (1983), Curry (1987) and others. Research on learning styles arose out of an awareness of differences in how people learn (one size does not fit all) and to plan for these differences in designing instruction. However we continue to use the same old cookie-cutter assembly line process approach to formal education. It is well known that everyone has a preferred learning style and yet we don't make learning designs SAVI (Somantic, Auditory, Visual & Intellectual):

Somantic involves physical activity during the learning process.

Auditory involves learners talking out loud about what they are learning. It is often true, as Sharon Bowman, points out in her book "Presenting With Pazzaz", that the person doing the most talking is doing the most learning because it stimulates the many areas of the brain including the sensory and motor cortices to solidify and integrate the learning.

Visual involves seeing, creating and integrating images of different kinds. Visual communication is generally considered to be more powerful than verbal communication because we have a greater mental capacity to process visual information than any other sense.

Intellectual involves using the mind itself to reflect on experiences and create meaning. The mind is "autodidactic" meaning the mind teaches itself through reflection and problem solving & by creating mental models based on what it has experienced.

The importance of the above is that people prefer different combinations of these four SAVI elements and engaging in all four has proven to enhance learning for all learners.

Learning Trends

In my experience 'pushing content' only (predominantlyin the form of eLearning) can be effective in very exceptional cases. Also, I have been inspired by our cooperation with two industry leaders. Here is a quotation from Roger Schank and one from Etiënne Wenger:

Drivers (R.Schank, E.Wenger)
A major source of low motivation in training is lack of accountability; therefore, try to move the simulation away from the computer and into the real world. Move the feedback away from the computer and to mentors. Ask learners to use available tools and resources: collaboration tools and work in teams.

Knowledge is not static and "Learning in organizations is first and foremost the ability to negotiate new meanings" (E.Wenger)

The first concept for ***effective learning*** was developed in 2002-04, and was based on the integration of formal and informal learning. "Learning by doing, task based" suitable for the current task. As much as possible applied in small teams, with the use of existing knowledge and experience (re-use of content) and fit to the learners' deliverance of transmittable and assessable results (deliverables).

The second concept is ***Just-In-Time (JIT) and Just-For-Me*** training (2006) followed by learning and cooperating in Global Life Long Learning & Working Communities (GL3C, 2007). In ouropinion JIT is not just about giving access to online learning modules that are available at all times (e-learning through an intranet) but it's tailor-made and led by a coach or mentor in a "on-the-job" digital pathway.

Both concepts are based on the observation that "A learner who experiences no problems has no questions at all and will learn little new". Therefore, increase the pressure to make something happen. Provide only information and examples when the learner asks for it. Learning to ask questions is a pathway of its own but in some cultures it is not common placeto ask questions therefore a paradigm shift needs to occur. In these cultures a student needs to be provided an environment where questioning is promoted. These pathways follow the principles of "Process oriented learning design: learning communities rather than learning repositories.

R.Koper and others, (2004,05)defined an effective pathway as "A more or less pre-defined set of activities for individuals (and teams) to gain the qualifications to accomplish a specific pre-defined task" (and can takeplace without any content, based on tacit knowledge)"

Other concepts include, project-based, learning through stories using Web 2.0 technologies and belonging to communities of interest.

The good news is that in pockets across the United States and Europe, schools and districts are unleashing contemporary technology -- combined with classic methods of inquiry-based learning that date back to Plato and Socrates -- to transform the learning process into a rigorous and more relevant experience. Consider a few notable examples:

- In Columbia, South Carolina, an elementary school uses computers to personalize student learning based on individual needs and abilities using games
- In Portland, Maine, middle and high school students have a 1-to-1 laptop program, strong school leadership, and project-based learning curricula that results in higher academic achievement
- In California many high schools have restructured to offer career academies – commonly referred to as a school within a school. They offer students a rigorous curriculum, enabling them to connect their learning to the "real world"

Are there enough of these schools and districts? No. Will the work of fixing our schools and re-inventing the learning process be long and arduous? Yes.But as we move on from debating what we ought to do and

get busy building a better way, let's remember that the solutions and (the tools and people who are implementing them)issues are not far away. In fact, they are nearer than you think.

Project Tomorrow conducted its annual survey in which they asked educators, parents, and kids about what kind of tool would they develop for learning. Students from kindergarten through 12th grade were asked one simple question: "If you could create the ideal mobile application for learning, what would it look like?"

Researchers received more than 200,000 responses with ideas and concepts current educators would never have imagined. It is clear that Students of every age have their own ideas about things…and they certainly have their own ideas about the best ways to learn.

By learning not only what but how these inspiring teachers and students are redefining learning, we hope others will consider how their work can promote change in their own and other schools.

Networks for Learning

Networks for learning have evolved and offer students radically new ways to research, create, and learn. But, too often, schools use computers as little more than glorified workbooks, and that's criminal, says Chris Lehmann, principal of Philadelphia's Science Leadership Academy. We have experienced that Schools and teachers who embrace networks have experienced improved grades in their Schools. There have been some noteworthy initiatives on Learning networks such as:

STEM (Science, Technology, Engineering and Math)

There is increasing emphasis in STEM and there are many such initiatives propping up in the United States. The primary purpose of these networks is to prepare students in STEM careers. Most of these programs use technology as an enabler and the majority of these programs are tasked based so it is the "learning by doing" method. These programs have demonstrated better attendance, lowered student discipline referrals, increased engagement, and higher achievement on assessment tests and finally it has resulted in increased interest in these disciplines and related professions.

NASA "LE&ARN" is a Learning Environments and Research Network.

The goal of NASA's Digital Learning Network™ is to enhance NASA's capability to deliver unique content by linking customers with one or more NASA Centers and broader audiences in an integrated fashion. This coordinated digital learning network leverages NASA's unique content, facilities, and personnel. The intent is to provide students and educators, at the precollege and university levels, around the world with unique experiences. Learners at all levels have the opportunity to interact directly with NASA engineers, scientists, and education specialists to gain a new appreciation for the importance of STEM education.

Learning in Corporate America

There has been an upsurge of Informal learning in the Corporate sector. There has also been a gradual shift from traditional classroom-based learning to Collaborative eLearning. This has been possible through the use of tools such as instant messaging, elearning support groups, expert communities, mentor and coaching networks, personal learning portals and mentored chats. This has provided a number of direct benefits to Corporations such as increased innovation, improved productivity, increase in more cost-effective knowledge transfer and an improvement in employee engagement. A great example is what Deloitte has done with its new world class learning facility where their faculty play the role of facilitators or coaches and guide participants efforts to acquire new skills rather than lecture to them.

How Disruptive Innovationcan Impact Learning?

The term "disruptive innovation," was coined by Harvard Business School professor Clayton Christensen the author of several books, including “Disrupting Class”: How Disruptive Innovation Will Change the Way the World Learns. Christensen defines disruptive innovation, as a positive force, as any development that transforms an industry whose products historically were complicated and expensive into something that is affordable, simple, and available to a much larger population.

He too argues that since all students learn differently we need to migrate education to a more modular student-centric approach using technology.He asserts that what schools have done, after spending billions of dollars, is crammed technology in the classroom while still using the samemonolithic methods of teaching vs using computers to promote a new modelthat allows them to change on how they operate.

I firmly believe that “Disruptive Innovation” theory does provide the framework for school leaders, teachers, parents and students to migrate to a student-centric classroom.

What needs to Change

I, for one, didn't enjoy school very much but there were times when I had a teacher who inspired me. However, as an adult, I began working with computer technology to tell stories and teach change management through the use of case studies. This led me to wonder, "Why couldn't we use these new technologies to help improve the school learning process?"

What we need today and in the future are citizens who can wield the tools of technology to solve complex problems. This implies that we need students who learn from a project-based curriculum by utilizing the seven survival skills advocated by Tony Wagner in his book, The Global Achievement Gap:

- Effective Oral and Written communication
- Curiosity and Imagination

- Critical Thinking and Problem Solving
- Collaboration across Networks and leading by Influence
- Agility and Adaptability
- Initiative and Adaptability
- Initiative and Entrepreneurialism
- Accessing and Analyzing Information

If we agree that we all learn differently and therefore need customized pathways of learning then why is it that schools continue to teach on the same old monolithic standardized style of teaching and assessing?

The first task in attempting to transform education is to change the way people think about education. What is its purpose and what do we need to do to accomplish that purpose?

Next administrators have to facilitate change. A lone teacher can do it, but it's hard to sustain. Administrators have to decide this is valued for the whole school community, and they have to give teachers time and freedom to learn, experiment, and play.

Schools will need to be structured to meet the needs of the students and will need to change to a project-based curriculum aimed at engaging students to solve real-world problems.

Teach students how to be effective collaborators and learn how to interact with people around them, how to be engaged, informed citizens. We need to teach kids the powerful ways networking can change the way they look at education, not just their social lives. Let's call it "Academic Networking."

A major source of low motivation in training is lack of accountability; therefore, try to move the simulation away from the computer and into the real world. Move the feedback away from the computer and to mentors. Ask learners to use available tools and resources: collaboration tools. Have learners work in teams to increases accountability.

What is truly needed is a redefinition of the "School", Teacher, "Curriculum" and "Learner".

Conclusion

I recently met some educators and asked the question "Why have we not changed the teaching methods from a "delivery" centric to a "learner" centric model" and most of the answers I received all culminated in that it is a very complexsocial and political, issue. We need to customize education to match the way each child learns best. However, standardization clashes with the need for customization in learning. Schools need to move from a monolithic instruction of batches of students to a modular, student centric approach using software, and learning communities, as an important delivery vehicle. Make design activity based. This will require our educators to re-think how they teach and create a modular system and customize learning.

If we don't change our level of thinking to encompass the systematic problems in which our schools are embedded and if we persist in believing that the problems of our schools can be solved by simply improving schools, we will never succeed.

I am reminded of a quote by Thomas Moore: "Education is not the piling on of learning, information, data, facts, skills, or abilities – that's training or instruction – but is rather making visible what is hidden as a seed."

To achieve this we need to radically re-think our entire education process and we are certainly not moving well towards this journey.

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