

Modern Socially Interactive Learning Tools and Flexible  
Teaching Strategies for Digital Literate Gen Z Students

by

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**Abstract**

In this research report I will attempt to provide a literature review of one of the current problems facing 2011 and future students and educators that may be contributing to the decline in standing of United States education world ranking. I will also look for opportunities where the research may help to address the concerns of CIO's that schools are not providing students with the skills they need to be prepared for success in today's modern workforce. This paper will review concern that the older baby boomers and Gen X generation of academic professionals must maintain their own technology skills while working within outdated change-resistant academic professional practices with rigidly traditional institutional policies and procedures. I will review new trends in learning technologies that can be used to solve current and perceived problems with the traditional learning models that may not meet the needs and expectations of the digital literate Gen Z students.



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## Chapter I: Introduction

In 2010 the Huffington post website reported that the “U.S. Falls in World Education Rankings, Rated 'Average’” (U.S, 2010) and USA today reported “In ranking, U.S. students trail global leaders” (In, 2010) both headlines were based off data reported in the three-yearly OECD Programme for International Student Assessment (PISA) report. In Montana and Petit (2008) survey of Chief Information Officers (CIOs) of more than two hundred corporations, the question asked was: What are the top skills colleges and universities need to be teaching their students that they aren’t now? The responses were:

- Communication/ People Skills
- Business Skills
- Real World/ Hands-on-Experience
- Troubleshooting
- Project Management
- Analytical Skills
- Integration

In this research paper I will look to provide a literature review of one of the current problems facing 2011 and future students and educators that may be contributing to the decline in standing of United States education world ranking. I will also look for opportunities where the research may help to address the concerns of CIO’s that schools are not providing students with the skills they need to be prepared for success in today’s modern workforce

### **Statement of the Problem**

One specific problem is that some of our U.S. professionals and institutions have not yet provided accommodating modern socially interactive learning tools and flexible teaching strategies for tech savvy digital literate Xbox, iPhone and iPod Gen Z students born between 1995 and 2010.

### **Purpose of the Study**

The purpose of this research paper is to outline technical opportunities for educators to implement and utilize modern trends in Information Communication Technology (ICT) learning tools and flexible teaching strategies for Gen Z students and survey learning technologies that could be of assistance.

### **Definition of Terms**

**ASTD.** American Society for Training & Development (ASTD) is the world's largest association dedicated to workplace learning and development professionals whose members come from more than 100 countries and connect locally in more than 125 United States chapters and with more than 20 international partners.

**Extrinsic Motivation.** Extrinsic motivation describes the drive to action that springs from outside influences instead of from one's own feelings.

**ICT.** Information and communication technology, usually abbreviated as ICT, is often used as an extended synonym for information technology (IT), but is usually a more general term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers, middleware as well as necessary software, storage- and audio-visual systems, which enable users to create, access, store, transmit, and manipulate information

**Intrinsic Motivation.** Intrinsic motivation describes the undertaking of an activity, as a hobby, without external incentive; also, personal satisfaction derived through self-initiated achievement.

**Moodle.** Originally an acronym for Modular Object-Oriented Dynamic Learning Environment, Moodle is an open-source course management system that educational institutions use to provide an organized interface for e-learning.

**Ning.** Ning is an online platform for people to create their own social networks. Users converse on a specific topic through forum posts and build resources by embedding videos and linking to articles and Web sites.

**OECD.** Organization for Economic Co-operation and Development (OECD) provides a forum in which governments can work together to share experiences and seek solutions to common problems.

**Web 2.0.** This term describes a new generation of Web services and applications that offer the opportunity to collaborate, share, and create content through social networking tools, blogs, wikis, Nings, Moodles, RSS feeds, and other online tools.

**WebQuest.** A WebQuest, according to WebQuest.org, is an inquiry-oriented lesson format in which most or all the information that learners work with comes from the web.

**WLP.** Workplace Learning and Performance (WLP) is a paradigm shift from human resource development and training and development.

### **Limitations and Methodology of the Study**

This paper does not take into consideration any cultural, environmental or socio-economic factors that may have an impact on the individual's ability to learn or access new technologies. There are and always will be social economical and many other factors that may

impact some members of a generations ability to meet or exceed their goal but in this research paper the direction is not to ignore these factors but to attempt to evaluate the opportunities for improvement of educational systems and processes by using ICT advancements in learning technologies under the controlled assumption that most of the U.S student population given the same opportunities would have relativity the same basic access to technology.

## **Chapter II: Literature Review**

### **Educators and ICT**

One particular area of concern that is a contributing factor in the preceding problem statement is that the older baby boomers and Gen X generation of academic professionals must maintain their own technology skills while working within outdated change-resistant academic professional practices with rigidly traditional institutional policies and procedures.

Older baby boomers and Gen X generation of academic professionals as students had a learning experience where student and instructor interaction was mostly direct face-to-face interaction with traditional written books and media, and in larger schools they may have experienced limited interaction in large lecture halls. Although traditional learning structures certainly play a role in the learning life of teachers, we need to update the approach (Huber, 2010). These professional are now faced with the task of having to stay current with new learning technologies to keep pace with the next generation of high tech students while trying to develop and use new Information and Communications Technology (ICT) type tools and curriculums that will meet and fulfill student needs and expectations.

One point also stated in OECD 2011 was that if teachers have adequate opportunities to develop their skills in using ICT in general, and their understanding of the nature of digital reading and digital texts in particular, they will be more likely to develop the skills and confidence to integrate them effectively into instructional practices on a regular, daily basis (OECD, 2011). Academic professionals play a key role in the success of the educational system in the U.S. As a country that leads the world in technological innovations and with a populace immersed in technology on a daily basis the acceleration of the use of ICT in all areas of our society is a natural progression.

In the current slow economy many resource strapped education facilities have not been able to fully take advantage of new learning technologies and implement modern high tech infrastructures and ICT tools that would both benefit students and educators alike. If the use of ICT is not an integral part of a school's vision for teaching and learning and instructional systems, teachers are unlikely to be motivated to invest in the use of ICT (OECD, 2011).

Even with an investment and commitment to ICT the expectation is that ICT will not totally replace all traditional learning tools and processes and will offer no guarantees on improving the U.S world ranking in education. ICT can be used as an effective design and implementation infrastructure to provide modern up to date learning tools and processes for today's internet savvy generation. ICT can enable students to obtain more regular feedback on their learning progress. It can also make students more active participants in learning processes in the classroom and tailor those processes to individual students' needs, and it can provide students with up-to-date access to the world's current research and thinking (OECD, 2011).

Demir (2011) states that teachers are the most important factors in determining the quality of education that students receive while research shows that empowering the educator with the appropriate resources, tools and strategies can influence the quality of education a student receives. In Geck (2006) several methods for implementing ICT learning technologies are outlined that will give teacher an advantage over traditional outdated tools and process. Some key strategies identified by Geck states that teachers can begin by:

- collaborating with classroom teachers to integrate Internet technologies into the curriculum
- providing students and classroom teachers with quality information from traditional library sources and from Internet resources

- supplying students and classroom teachers with web page design technologies to deliver effective presentations
  - creating communities of learners or electronic learning modules by linking classmates' web pages to a central page or starting point
  - taking a lead role in establishing and designing online communities of learners
  - student research projects, including the presentation component, need to be revamped and reconsidered in the new digital environment
  - design assignments that foster the Internet as a communication and teaching tool.
- Web pages can be used as an important aid in teaching or facilitating the information search process
- instead of having students simply present orally, teachers can have them present using web pages in combination with presentations similar to those using PowerPoint

These are just a few of the potential modern strategies that researchers suggest that can be implemented to improve results in learning environments. Geck also points out that youth can be offered instructional sessions on how to recognize misinformation and bogus information on the Web and teacher can show these students other skills important in evaluating the quality of web resources. According to the American Library Association's "information literacy standards for student learning" (1998), a student is only information literate if he or she "accesses information efficiently and effectively," "evaluates information critically and competently," and "uses information accurately and creatively" (as cited in Geck, 2006). Implementing these strategies Geck proposes will not only allow teachers to improve their own skills but will also minimize the technology gap between themselves and their students.

## **Generation Z**

According to the Encarta World English Dictionary, Generation Y is defined as people born in or after 1980. Although Generation Z is not yet defined in the dictionary, the term is sometimes used to describe the already-existing next generation of teenagers born in or after 1990 in technologically advanced countries (Geck, 2006). For the purposes of this study, Gen Z students are defined as those born between 1995 and 2010.

Waters (2011) alludes to the fact that the Marc Prensky (2001) theory stating that the arrival of a new generation of students whose immersion in information technology distinguished them in fundamental ways from previous generations called the Digital Native concept has not yet materialized. Waters concludes that not all students within a generation are as tech savvy as others or as tech savvy as some of the preceding generation. The Gen Z students will also have different levels of tech literacy within their group as do all generations but the expectation is that this generation will have a significant level of its populace that will have no inhibitions to a high tech learning environment and in fact will expect learning tools and environments similar to the technology they have routinely utilized throughout their day to day lives. This will be a somewhat natural progression in many cases as students in the past were taught with Chalk boards, Mimeograph machines, and 8mm audio visual equipment. Today's students are taught with White boards, PowerPoint presentations, and computer based multimedia. As the baby boom and Gen X era of educators age and begin to transition out of the workforce the next generation of teachers Gen Y and beyond may be faced with an even smaller technology gap to overcome. Julie Evans, chief executive officer of Project Tomorrow a nonprofit focused on improving science, math, and technology in K-12 schools makes the case that, even though we've been talking about digital natives for ten years, the first wave of true digital natives-kids

who have been connected to the internet in school since kindergarten--is just now in middle school (as cited in Waters, 2011).

Although most Gen Y students were tech savvy adolescents they were not introduced to technology until in primary and middle school while Gen Z students may have had access to computers as early as in their toddler years. Geck (2006) contends that these youth are the first generation to be born into a digital world and are the most electronically connected generation in history since from infancy; these teenagers grew up in an environment surrounded by and using graphical web browsers, laptops, cell phones, instant messenger services, broadband, wireless, and video games. The challenge for educators will be can they find a way to help these future students transform this early stage of technical literacy into productive tasks that truly enhance the educational experience and yield tangible results in producing a well educated United States society and workforce. Anderson (2004) posed the following question; "Can Generation Z make quantum leaps in medicine and research, inventing new technology and curing diseases, while providing poetic ways to salve our cancer-ridden population? Dynamic discoveries are possible when professors provide direction for their students to uncover new ways of learning and new horizons for humankind (Anderson, 2004). Gen Z will be the first generation of the true digital natives and with that distinction comes more potential than ever seen before to advance our educational goals by using ICT learning technologies. Educators, parents and Workplace Learning Performance (WLP) professionals must find a way to motivate this generation to develop and utilize the early technology literacy they possess into something more than just social tools for web surfing, mastering video games and text messaging opppressions.

## **Motivation**

The results of the Teachers' Intrinsic and Extrinsic Motivation as Predictors of Student Engagement study indicated that student engagement was predicted significantly by primary school teachers' intrinsic motivation and extrinsic motivation (Demir, 2011). Educators capable of delivering curriculums that will allow Gen Z students to use and develop the technology skills that they have will be well positioned to inspire and motivate these student to accomplish great goals. Teachers can motivate these students to become better critical thinkers when evaluating websites and researching historical and current events, they can use video game type simulators that utilize the same type of dexterous hand and eye coordination required to teach skills such as how to pilot a plane or land a space shuttle, and utilize mobile app technology to deliver creative tools to re-enforce learning objectives. Expect simulation exercises to become a much more prominent part of instruction, predicts Pausch, who runs Carnegie Mellon's Entertainment Technology Center and the Alice project, which exposes young students (as early as middle school) to the wonders of building a three-dimensional interactive software program (Dillon, 2007). Teachers can utilize the Gen Z student's knowledge and familiarity with technology to connect to the student in a meaningful way and motivate them to reach new heights and accomplish challenging goals while providing modern learning tools and curriculums that may yield better results than traditional out dated teaching methods.

Demir (2011) found that while teachers' extrinsic motivation has also a direct and positive influence on student engagement, their intrinsic motivation is the most important predictor of student engagement. Information and Communications Technology type web and internet based multimedia learning tools can help bridge the gap between educators and help engage Gen Z students. Geck (2011) stated that equally important, these youngsters will pay

attention and will be motivated to learn material that makes them appear more web savvy or helps them to become more knowledgeable about the Internet.

### **Web 2.0**

There are many ICT type tools to assist educator with developing modern curriculums that will help to engage and motivate Gen Z students but none seem more fitting then Web 2.0 technologies. The term “Web 2.0” was coined by O’Reilly in 2004 to represent the concept of grouping a set of design and functional characteristics for web pages (as quoted in Cifuentes, Alvarez Xochihua, & Edwards, 2011). Terrell, Richardson and Hamilton (2011) state that the term 'Web 2.0' is generally used to describe a broad range of software and services such as blogs, wikis, social networking tools, newsfeeds, sites for sharing media such as video and photographs, and many more. These are the exact same ICT tools Gen Z students will be familiar with using and transforming these tools into learning technologies will provide educators with a advantage in delivering educational content.

Gen Z toddlers will grow up watching digital, HD and 3D television, using high speed internet access with streaming video, using the net and mobile devices for apps that will do almost anything, finding needed information in a click of a mouse and all this will be the their normal. To impress, connect with, and motivate this generation will require teachers to meet or exceed their digital expectations. Because of their early exposure to large amounts of graphic and web content and their comfort level with new digital applications, teens will be receptive to new information incorporated with graphics or introduced using Webquests and other types of Internet- based lessons (Geck, 2006). Past generations were not exposed to as much technology as Gen Z and some have struggled with learning new content while at the same time learning new tools and technologies. Chih-Hsiung et al. (2008) found that many advanced networking

technologies require that learners learn and manage these technologies deliberately. It will require learners with a certain correct understanding, technical skills, and positive experiences to maximize the advantages Web 2.0 provides. The Gen Z students are the first learning generation with the full potential to maximize the advantages of the Web 2.0 learning experience and as this generation begins to move through the educational system for eventual placement into the workforce maximum exposure to Web 2.0 technologies would yield the best possible outcomes.

Training (2009) found that only 9% of companies say Web 2.0 technologies play a major role in the learning function of their company, but 87% predict their companies are likely to use these technologies more in the next three years than they currently do. If the WLP professionals are moving to Web 2.0 technologies academia will need to also prepare students to meet the needs of the changing workplace. Data from American Society for Training & Development (ASTD)'s State of the Industry report shows that organizations are using technology more than ever before to deliver learning (Salopek, 2008). By centralizing trainers in one location and using Web 2.0 to deliver and develop content, organizations can reduce training cost while maintaining quality and meeting employee training needs.

Web 2.0 is one ICT that has the potential to benefit educators and students yet those United States educators and institution that have not yet implemented Web 2.0 as part of their curriculums or at least began planning to may find themselves, their institutions and their student in a increasing downward spiral in any attempt to keep pace with other countries in meeting and competing in the race to achieve world educational needs and goals. Although current research does not definitively conclude that outdated learning tools were a direct cause to declining United States World rankings in education, Trainer (2009) finds that training professionals must

understand the opportunities Web 2.0 technologies provide for learning and lead the paradigm shift in how the profession thinks about informal learning.

Two-thousand and ten (2010) data does suggest that the Web 2.0 tools are beginning to take hold in university distance education programs and in mid size business and enterprise organizations to meet geographical training challenges. To meet the expectations of the Gen Z students Web 2.0 should be used as early as possible in their educational process. Huber (2010) found that Web 2.0 technologies can help schools create structures for sustained, complex, and meaningful professional learning. Moodle, originally an acronym for Modular Object-Oriented Dynamic Learning Environment is an open-source course management system that educational institutions use to provide an organized interface for e-learning. With Moodle and other Web 2.0 tools, teachers no longer need to go to a specific place for professional development or wait to hear someone from the outside tell them what they need to do. Rather, ongoing professional learning is now part of the culture of the school (Huber, 2010).

There is also data that suggest that there are some challenges still with implementing Web 2.0 technologies. Olaniran (2009) states that Web 2.0 contains the potential to create additional dimensions for learning for two reasons; First, it helps foster the ideas and tools for e-learning by driving the development of user input and co-development of resources. Second, it allows students to move away from the tightly held control of teacher- or instructor organized activities and curriculum, to a context, or platform, where learners are able to establish and control how, and when, they learn. Some research has shown that if students have to spend a great amount of time and effort learning how to use new learning tools then the educational benefits of using such tools may be diminished. If too much effort and energy is being focused on the learning tools less time and effort will be available to focus on the actual learning

objectives. Content material, which is the true achievement goal of the curriculum being taught, can be overshadowed if the learning tools are too complex for the learner to effectively use.

Cifuentes et al., (2011) found that cognitive load theory indicates that learning both Web 2.0 applications and content simultaneously split students' attentions and contributed to cognitive overload. Cognitive load theory indicates that learning both Web 2.0 applications and content simultaneously split students' attentions and contributed to cognitive overload (Cifuentes et al., 2011). Cifuentes et al., (2011) also states that the requirements for students to apply Web 2.0 tools interfered with clear course organization and provided time consuming technical difficulties, thereby increasing students' cognitive loads. Cifuentes et al., (2011) concluded that our quandary regarding requiring students to apply Web 2.0 tools will become a none-issue soon enough as students become more agile with Web 2.0 technologies. The Gen Z students will be the students with the agility needed to overcome the challenges of the Web 2.0 learning curve. Olaniran 2009 indicate that Web 2.0 technologies may be able to adapt to the changing needs of learners and the groups they serve and in 2008 reports, both the National Science Foundation (2008) and Educause (2008) unanimously identify Web 2.0 as an emerging learning technology that will critically impact human learning and challenge researchers and scientists to investigate how Web 2.0 might impact human learning (Chih-Hsiung, Blocher, & Roberts, 2008). The Gen Z students may be able to utilize these tools at a basic level to learn pre-school curriculums and will definitely be adept enough to handle Web 2.0 learning tools in elementary and middle school. By the time they reach high school and college the student's expectations will be more geared toward mobile and social learning type tools that may coin the next phrase of Web 3.0 or 4.0 technologies.

## **Social Learning**

With billions of Americans and others around the world actively engaged in social media, it would be a natural evolutionary process to utilize this ICT media in other social engaging activities. There has been a traditional social component to attending schools and universities and the foundation of Facebook came out of student's desire at Harvard University to socially interact. One approach to using ICT type learning tools would be, instead of the traditional method of trying to bring students into academic setting go to where the students are, social media. Social learning can build on this concept. In Wilkins (2010) it was stated that to one expert, the future of learning is a kind of workplace community. For another, it's a new application of social media to an existing business process. Others call it simply "learning 2.0" or "social learning. Wilkins does not serve up social learning as a magical cure that will fix all that may be wrong with our educational institutions in fact, Wilkins contends that a social learning model will not replace, eliminate, or displace traditional formal learning but according to research by both Jay Cross and the United States Department of Labor, the vast majority of learning in organizations happens socially or informally. If social learning is already occurring in the workplace and businesses are adapting their business processes to take advantage of the social media phenomenon, then academia may also benefit by adapting learning technologies to include social media ICT.

In a 2009 Professional Safety report, it was stated that the Gen Y's, who would account for almost half of the workforce in five years, have grown up with the Internet and they are driving this trend toward social learning," explains Tony Bingham, ASTD president (Training, 2009). The Gen Z students may not be using social media as preschoolers but social media usage trends are certainly on pace to be an integral part of their adolescent existence. As more

and more businesses and workplace communities move to social media to engage their customers the academic community will eventually need to begin to do the same to engage the Gen Z students as well. Gen Z students will undoubtedly be influenced in some capacity by social media the same as Gen Y was and is today. In a recent report on workplace learning trends Ketter (2010) states that Gen Y found social media tools more helpful in terms of learning and getting work done than Generation X workers or Baby Boomers. Ketter also concluded that the need to make social media and mobile learning a part of the workplace to attract, engage, and retain the younger generations is forcing learning professionals to explore new and innovative ways to deliver learning on inexpensive devices, anytime and anywhere (Ketter, 2010). As the WLP community realizes and implements new, creative and cost effective ways to educate their workforce with tools like the social learning model, the academic institutions will also begin to venture down this path to better prepare their students for the workforce they will encounter upon graduation. Current research does not suggest that social media has begun to take hold as a tool for delivering academic curriculum content to students but Training (2009) states that the American Society for Training and Development (ASTD) says that for training professionals to increase their relevance and understanding on how the next generation in the workforce will learn, they must understand the influence of social media. Gen Z students will be receptive to social learning as social media will be a 2 or 3 generation old ICT tool for them that will meet their expectations for interaction and not put a cognitive load on their abilities to receive and digest the underlying message being communicated.

Distance education would be one area in academia or workplace training that would be well suited for mapping process to a social learning model. One disadvantage of distance education is the inherent level of difficulty presented when trying to socially interact with the

instructor and peers. Social Learning can be a tool to help overcome this challenge. By utilizing the social media infrastructure instructors and peers can engage in a socially interactive environment using tools they already know how to use to re-enforce academic learning objective via social conversations. Educators and corporate trainers can use social learning to share whitepapers and industry research and analysis reports. Intellectual discussions can be conducted in a social learning environment just by simply limiting the access to a social media website learning tool to a select group of individuals with similar interest and goals. LinkedIn is a social media site for professional and the interaction tends to be more productive and purposeful than Facebook interactions. Eventually corporations and schools will begin to increasingly utilize the social media ICT infrastructure to build their own social media sites to support their own social media learning models. Tony Bingham president of the American Society for Training and Development (AS&D) stated that social media is here to stay and using Web 2.0 technologies provides the catalyst to take our careers, our profession and our organizations to the next level (Training, 2009).

### **Chapter III: Discussion**

At the start of this paper it was introduced that recent media events had alerted the nation that the United States educational system had begun to slip in world ranking and that there exist concerns in the business community that academic institutions were not providing students with the skills needed to meet the needs of today's modern high pace workforce. The goal of the paper was to look to provide a literature review of one of the current problems facing 2011 and future students and educators that may be contributing to the decline in standing of United States education world ranking and the concerns of CIO's that schools are not providing students with

the skills they need to be prepared for success in today's modern workforce. The problem identified was that some of our United States professionals and institutions have not yet provided accommodating modern socially interactive learning tools and flexible teaching strategies for tech savvy Xbox, iPhone and iPod Gen Z students born between 1995 and 2010.

Research shows that although there has been over a ten year discussion on the impact of tech savvy students coming into the educational systems the current student population may not be as well prepared for ICT type learning tools as previously thought. The Gen Z students and the generation following them will be the generations best suited to take full advantage of the trend of academics and the WLP community moving towards ICT type learning tools.

In order to successfully use modern learning tools to meet the expectations of the digital literate Gen Z student population teachers and student engagement with these technologies will be one of the most important factors that will lead to improvements in academic achievement. Teacher and academic institutions will need to embrace new learning technologies in their own personal education and integrate them into institutional policies, processes and procedures. Demir (2011) found that intrinsic and extrinsic motivation are important factors in the teacher student relationship and in this paper one conclusion drawn was that teachers who truly enjoy teaching and shaping young minds will possess the external and internal motivating factors needed to guide this generation. They will find it intrinsically motivating as it will be personally rewarding to be able to mold the Gen Z students into productive members of society. The fact that the United States standing in world education has dropped should provide enough external extrinsic motivation to empower academia to look for new ways to achieve better educational results. This research suggests that being born in the Gen Z era is not enough to ensure academic

success. If teachers are unable to motivate this generation to further develop their early digital literacy into productive outcomes.

Web 2.0 technologies are discussed as a tool academic and the Workplace Learning and Performance (WLP) community can use to motivate Gen Z. students by engaging and connecting with them when providing modern ICT learning tools that students are already familiar with using and meets their expectations on how content should be delivered and received by learners. Although Cifuentes et al., (2011) found that cognitive load theory indicates that learning both Web 2.0 applications add content simultaneously split students' attentions and contributed to cognitive overload, in this paper it was presented that Gen Z students would be able to overcome this challenge as they will not have the same difficulties with Web 2.0 tools as previous generations.

Social Learning was also presented as an up and coming trend in ICT learning tool technology that can help solve problems with motivating and educating the United States student population. The social media infrastructure can be used to help bridge the social gap presented by distance education and would also be a Web 2.0 tool Gen Z students would embrace and accept.

### **Limitations**

As stated earlier this research paper does not take into consideration any cultural, environmental or socio-economic factors that may have an impact on the individual's ability to learn or access new technologies. There are and always will be social economical and many other factors that may impact some members of any generation's ability to meet and exceed their goals. In this research paper the intent is not to totally ignore these factors it is to attempt to evaluate the opportunities for improvement of educational systems and processes by using ICT

advancements in learning technologies under the controlled assumption that most of the U.S student population, given the same opportunities, would have relatively the same basic access to learning technology.

### **Conclusions**

Current research does not identify the exact cause and effect relationship on why United States students are slipping in the world academic standings but it does support the conclusion that academic gains can be accomplished by utilizing ICT type learning technologies such as Web 2.0 and Social Learning models. These gains would be most evident when teachers are able to motivate the digital literate Gen Z students to capitalize on their early understanding of technology and grow this familiarity with ICT into tangible and valuable outcomes. Teachers who truly enjoy teaching and shaping young minds will possess the external and internal motivating factors needed to guide this generation. They will find it intrinsically motivating, as it will be personally rewarding to be able to mold the Gen Z students into productive members of society. The fact that the United States standing in world education has dropped should provide enough external extrinsic motivation to empower academia to look for new ways to achieve better educational results. Although Web 2.0 learning tools can make an educator or trainers job easier to accomplish just like all tools they must be utilized by experience skilled craftsmen to yield the best high quality results. Even when working with the best raw material in Gen Z tech savvy and digital literate students since birth if they are not effectively motivated to succeed they will fail.

### **Recommendations**

To solve the problem that some of our United States academic professionals and academic institutions have not yet provided accommodating modern socially interactive learning

tools and flexible teaching strategies for tech savvy Gen Z students, academic institutions and the WLP community can begin plans to embrace and integrate Web 2.0 technologies throughout the life cycle of the educational process from pre-school through adult continuing education program. Academics can use Web 2.0 software and services such as blogs, wikis, social networking tools, newsfeeds, and sites for sharing media such as video and photographs. Social media technologies should be applied to current academic learning and professional business training processes and more research should be conducted on social learning modules and opportunities in mobile learning and how best to develop these technologies into efficient and effective ICT learning technology tools.

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