

## Relevance of Standardized Class Learning System on Y Generation Workforce, in Kenya

Anthony K. Kiptoo<sup>1</sup> and Tabitha Wangare Wambui<sup>2</sup> Gichuki  
David<sup>3</sup>

Email: tonnytookim@gmail.com/tawangare@gmail.com

<sup>1</sup>Research Scholar, Karatina University; <sup>2,3</sup>Lecturer, Karatina University

DOI Link: <http://dx.doi.org/10.6007/IJARBSS/v5-i11/1901>

**Published Date:** 10 November 2015

### Abstract

In recent time, learning and teaching strategies have been significantly influenced by globalization. Latest technologies have altered how information is presented and how students interact with that information. Not only would educators have to cope with new technologies and a new generation of learners of different learning attitudes and styles but they also ensure that the learners are prepared to meet the 21<sup>st</sup> century dynamic workplace needs. This paper's findings indicate that lecture learning technique is still the popular learning method in institutions of higher learning but the technique does not adequately help in preparing learners meet the demand and needs of 21<sup>st</sup> century workplace. However, although learners suggested skills training, problem based, online and lecture techniques respectively as the best technique that can help learners meet the challenges of workplace it was revealed that 60% of the learning is through lectures, 12% online learning, 10% problem solving and 6% skills based training. In overall learners support that hybrid of all four techniques as the best method to help them overcome challenges of workplace. The paper recommends that institutions of higher learning should adopt hybrid learning techniques that will prepare learners meet the ever changing workplace needs, this can only be achieved through aligning the curriculum and techniques of delivery with current demands.

**Keywords:** *Y Generation, Lecture, online learning, problem based, skills based, 21<sup>st</sup> century workplace needs.*

### Introduction

Kogan (2007) suggests that we live in a time when many different generational groups are engaged in the workforce. With Generation Y individuals evident in the labour market the workplace is now made up of individuals from three distinct generational groups. This shows that workplace is changing and employees are changing to 21<sup>st</sup> century workplace environment.

The 21<sup>st</sup> century is quite different than the 20<sup>th</sup> in the capabilities people need for work, citizenship, and self-actualization. 21<sup>st</sup> century skills are different than 20<sup>th</sup> century skills primarily due to the emergence of very sophisticated information and communications technologies. For example, the types of work done by people as opposed to the kinds of labor done by machines are continually shifting as computers and telecommunications expand their capabilities to accomplish human tasks. This means that the future growth and stability of our global economy depends on the ability of education systems around the world to prepare all students for career opportunities and help them attain higher levels of achievement. However, despite numerous efforts to improve educational standards, school systems around the world are struggling to meet the demands of 21<sup>st</sup> century learners and employers. In both developed and developing nations, young people have become increasingly reliant on social networking technologies to connect, collaborate, learn, and create, and employers have begun to seek out new skills to increase their competitiveness in a global marketplace. Education, meanwhile, has changed much less to meet the changing generations and workplace needs and preferences. With few exceptions, universities systems have yet to revise the way they operate to reflect current trends and technologies (National Academy of Science, 2006).

As another illustration of how 21<sup>st</sup> century skills differ from the knowledge communicated by schooling through the 20<sup>th</sup> century, sophisticated information and communication technologies are changing the nature of “perennial” skills valuable throughout history, as well as creating new “contextual” skills unique to new millennium work and citizenship (Dede, 2009). However, the degree of importance for collaborative capacity is growing in an era where work in knowledge-based economies is increasingly accomplished by teams of people with complementary expertise and roles, as opposed to individuals doing isolated work in an industrial setting (Karoly, 2004).

Often, students do not realize the importance of possessing transferable skills, and they assume that mastery of skills within their discipline is enough to get that all-important, post-graduation position (Robinson & Garton, 2007). Still, according to many, people graduating from colleges and universities often lack the skills needed in the world of work. This lack of preparation may be the result of three factors including not listening to professors and advisors, lack of participation in class exercises, and an inability to transfer meaning from their experiences into choices that will impact their future.

According to the Partnership for 21<sup>st</sup> Century Skills (2006) and American Management Association’s (AMA) 2010 survey, many employers believe that higher education is failing in its role to adequately develop needed skills in students. In higher education, lecturers can influence students by promoting the skills businesses are seeking in future employees and helping students achieve these skills through course activities. Lecturers can also influence the choices students make through advising relationships.

### ***Higher Education and 21<sup>st</sup> Century Workforce Needs***

Modern Higher Education has undergone radical and unprecedented change in the last 20 years (Roberts Report, 2003). Today's learners come to University with very different prior experiences and technological skills. They also come with diverse expectations and assumptions about how, where and when technology may be used within their course. Descriptions of learners have tended to focus on whether or not they are the 'digital natives'

from 'Generation Y', whereas in fact learners now represent vastly different demographics within an ever-changing heterogeneous community (Caldwell et al, 2006).

According to its Web site (<http://www.p21.org>), the Partnership for 21<sup>st</sup>Century Skills is a national organization founded in 2002 with help from several businesses and the U.S. Department of Education. It is devoted to promoting student workplace readiness, and its Strategic Council includes a variety of members: American Association of School Librarians, Knowledge Works Foundation, Adobe, Pearson, Apple, Dell, ETS, Hewlett Packard, LEGO Group, Microsoft, and Verizon among others. The Partnership for 21<sup>st</sup>Century Skills works to encourage institutions to incorporate 21<sup>st</sup>century skills in educational curricula. It stated: In an economy driven by innovation and knowledge in marketplaces engaged in intense competition and constant renewal in a world of tremendous opportunities and risks in a society facing complex business, political, scientific, technological, health and environmental challenges and in diverse workplaces and communities that hinge on challenges and in diverse workplaces and communities that hinge on collaborative relationships and social networking the ingenuity, agility and skills of the United States people are crucial to U.S. competitiveness. (Partnership, 2008, p. 1)

According to study by Aspen Institute (2007) because of the accountability systems built into this model of educational reform, teachers are using weak but rapid instructional methods, such as lecture and drill and practice, to race through the glut of recipes, facts, and test-taking skills they are expected to cover. Despite research indicating that guided inquiry, collaborative learning, mentoring, and apprenticeships are far more effective pedagogical strategies, introducing these into school settings is difficult given the crowded curriculum and the need to prepare students for high stakes tests. Simply delivering required information for students' passive absorption takes every second of instructional time. Teachers have no means by which to prioritize what understandings and performances to emphasize in terms of 21<sup>st</sup> century citizenship; workplace capabilities for the global, knowledge-based economy; and lifelong learning.

Research by both Black and Lynch and Zoghi, Mohr, and Meyer (as cited by Partnership for 21<sup>st</sup>Century Skills, 2008) detailed how companies have changed the way they do business and how workers have more responsibility and contribute more to businesses in order to meet the demands of today's competitive economy. In 1967, about 54 percent of the United States' economy was based on production of material goods and services. By 1997, 63 percent of the United States' economy had moved to an information product and service economy (Partnership for 21<sup>st</sup> Century Skills, 2008). From 1995 to 2005, 17 million service-sector jobs were created, and over 3 million manufacturing jobs were lost (Partnership for 21<sup>st</sup>Century Skills, 2008).

According to Ferguson, (2007) currently, businesses spend billions of dollars every year to hire and train employees. Businesses want workers who can help increase profitability by reducing costs associated with training, turnover, and production errors. In fact, recent economic challenges have forced organizations to go forward with their strategies using fewer resources especially people. Businesses do not do less; the people they hire do more to accomplish the companies' goals and objectives.

According to Nicols, Glass, & Berliner, (2005) among all these problems, the biggest single issue is that the first generation of highs takes tests that our nation is using to determine students' educational outcomes have substantial flaws. In addition, while some assessments emphasize on core ideas and measure at least a few higher-order thinking skills, many state legislatures have allocated such limited resources for test development that the resulting instruments often measure only a random assortment of low-level skills and content, rather than core, higher-order 21<sup>st</sup> century understandings and performances which the paper sought to establish relevance of standardized learning techniques in meeting the 21<sup>st</sup> century workplace needs and challenges.

### **Problem Statement**

As employers continue to seek out new employees to replace those who have left the workplace, Generation Y is starting to enter the workforce in record numbers. There are an estimated 80 million kids and young adults in this new generation (Orrell, 2007). Companies are spending millions of dollars updating their recruiting efforts, corporate cultures, and management styles to accommodate this unique generation (Orrell, 2007). It is estimated that this generation will create new definitions for work environments, success, leadership, communication, management, entrepreneurship, corporate culture, and professional relationships (Orrell, 2007). As this group of young future workers enter the workforce, bringing their unique style and new refreshing perspective, organizations are forced to adapt or risk losing billions of dollars to unwanted turnover and lost productivity (Sujansky & Ferri-Reed, 2009). Those companies that lack a process to attract, hire, and retain this dynamic new generation risk losing billions, but despite the high expectations that comes with this new generation most of their training are not applicable to the current workplace needs, it is upon the organization to change to make radical changes or higher education to adopt learning methods that will equip them with skills that are needed in the globalized workforce. This is because the traditional notions of education are no longer sufficient to prepare a workforce for a contingent and dynamic world. Currently, we live in an era driven by information, global competition and new technologies that are changing the way we think, live and work. The Industrial Revolution was built on machinery, skills and labour; however, the information and knowledge-based revolution of the 21<sup>st</sup> Century is being built on investment in intellect and creativity. New jobs are emerging which require a different set of knowledge, skills and attitudes. Despite the efforts made by the companies there is still a gap between the institution of higher learning and workplace needs. This is because in today's dynamic and unforgiving economy, all higher education learners must graduate from university with the academic and applied skills necessary for success in career. Economic and political changes have rendered the current "one-size fits all" model where education is delivered primarily in classroom settings with limited opportunities for applied learning across disciplines inadequate to prepare all students for success. The results are unacceptably low graduation rates, substantial remediation rates for other courses, and limited opportunities for many graduates to find jobs at wages sufficient to support a family while others graduate with skills that cannot be applied in the ever changing globalized workplace and this is why this paper sought to find the relevance of standardized education in the 21<sup>st</sup> century workplace where Y generation are working.

## Literature Review

### Workplace Generation

*Baby Boomer's Workforce*, according to Bartley et al., (2007), this generation is driven by the mentality that the possibilities are endless. They are interested in learning new skills, having an opportunity for personal improvement and the opportunity to be creative (Cennamo& Gardner, 2008). Cennamo& Gardner (2008) also note that the focus of this generation on hard work and achievement suggest that Boomers value status and extrinsic rewards for loyalty and commitment.

*Generation X Workforce*, according to Hart (2006), this generation is unimpressed with authority and prefers leadership based on competence. Gen X desires more flexibility with their schedules, unlike the previous generations. It has been noted that Gen X works to live rather than lives to work (Bartley et al., 2007). This cohort prefers guidance and inspiration from their managers only in the planning stages of a project and prefers to be left alone between goal setting and completion of the project. As a result of their desire to create their own success, Gen X prefers a manager who acts as a teacher, mentor, or facilitator. Since Boomers tended to be controlling, diligent, and overworked, the characteristics of Generation X in the workplace create a challenge for their predecessors.

*Generation Y Workforce*, generation Y is used to instant communication and is accustomed to giving and getting instant feedback according to Hart (2006). In the workplace, Gen Y prefers constant feedback and detailed instructions. As a result, they are more at ease and are able to do the job right (Glass, 2007). The readily available technology has molded them into team-oriented, interpersonal, and gregarious new workers (Bartley et al., 2007).

### Changing workplace Needs in 21<sup>st</sup> Century

According to Croker (2007) our culture, technology, society, media, and events have a powerful influence on what we do and think. Those influences shape our decision making and life choices, including how we approach work. For example for Gen Y, training requires not only equipment and instructional hours, but designing (or redesigning) short, repeatable training units that capture the attention of this digital generation and that can be repeated for improved retention and performance. Hands-on problem solving, time tests and simulations work best, Davidson and Goldberg (2009).

Thus far, the 21<sup>st</sup> century has seen a dramatic shift in the economic model for industrialized countries (Dede et al, 2005). Systems of economic development based on geography, trade rules, and tariffs; slow dissemination of scientific and technological discoveries; and long cycles of product life have given way to global trade, rapid product innovation, the lowering of trade barriers, rapid dissemination of scientific and technological discovery, and rapid global deployment and movement of capital and the means of production (Chang, 2010). In the early 21st century, income and wealth come from applying technology and new ideas to create new products and processes. Adding value to products and processes is the key to growing jobs and incomes in this new economic environment (Aubert&Reiffers, 2004).

Competitive advantage for a region, state, or nation is now built on the skills of its general workforce, as opposed to its geography, trade laws, research labs, and patents; and critical to that competitive advantage are the education and skills training adults acquire in primary and secondary schools (Organization for Economic Co-operation and Development, 2001). In this new economic environment the New Economy education plays a critical role in maintaining national prosperity and stimulating economic growth (Stevens &Weale, 2003). The level of

workforce skills and the periodic need to update those skills are both steadily rising, with no end in sight (Temple, 2001). The New Economy is driven by entrepreneurs, technology, and innovation. Novel ideas, discoveries, and technologies have produced whole new industries and products.

### **Employers needs in 21<sup>st</sup> Century Workers**

Numerous reports on the global, knowledge-based economy and the “flat” world document that tomorrow’s workers must be prepared to shift jobs and careers more frequently, to be flexible and adaptable in acquiring job skills, and to integrate and focus a changing mix of job-derived and education-based knowledge on business processes and problems (Friedman, 2005). The application of information technology to the very core of business operations has caused a profound change in the needed skills and talents of New Economy workers (OECD, 2004). Markets in the New Economy are rewarding those who have high educational achievement and technical skill (Task Force on the Future of American Innovation, 2005).

The worker of the 21st century must have science and mathematics skills, creativity, fluency in information and communication technologies, and the ability to solve complex problems (Business-Higher Education Forum, 2005). As the global economy continues to evolve, predictions are that workers will change jobs seven or eight times during their work life. To be competitive in this constant churn, workers will have to engage in lifelong learning to update their education and job skills (Card & Dinardo, 2002). Clearly, the future personal economic security and well-being of American workers is tied to educational achievement (Federal Reserve Bank of Dallas, 2004).

Yet much of developed and developing world’s education is still based on the premise that economic processes and institutions will mirror those in the 20th century. Students are prepared to be future employees of business organizations now rapidly becoming obsolete (Business Roundtable, 2005). Current trends suggest that more students will run their own businesses rather than work for others and as adults must constantly, quickly, and efficiently learn new skills and information to be effective entrepreneurs.

Thus, a crucial challenge for education is to align curriculum and learning to a whole new economic model based on an emerging global, knowledge-based workplace (Dede et al, 2005). To accomplish this we must transform children’s learning processes in and out of school and engage student interest in gaining 21<sup>st</sup> century skills and knowledge. Linking economic development, educational evolution, workforce development, and strengthened social services is essential to meeting this challenge (National Academy of Science, 2006).

According to Clark (2000) basically, learning is process whereby an individual or a firm acquires, creates, and disseminates new knowledge by combining and recombining different pieces of knowledge into something new. Strictly speaking, only individuals can learn, organizations – made up of individuals – can foster this individual learning and try to integrate it into their routines, organizational processes and finally products. The role of universities in this mode of knowledge development has been ambiguous (Gonczi, 2001).

### **Generation Y Learning Preferences and Expectation**

Rapid technology advances have contributed to Generation Y having a much lower reliance on a personal knowledge database stored in their brain, and more on finding factual

information at the moment it is needed. Knowledge is no longer perceived to be the ultimate goal of this generation; results and actions are now more valued than the accumulation or memorization of facts Tapscott (2009).

**A need for immediacy;** Generation Y live in a 24/7 culture where there is little tolerance for delays, and like to receive information just in time and from several multimedia sources. To this generation, issues of time and difficulty in obtaining information are usually of more concern than accuracy. However, it is unclear whether this is because they are not concerned about accuracy, or because they are assuming most information is by nature accurate Weiler, (2005).

**Trial and error approach to problem solving;** As a result of not wanting (or needing) to accumulate knowledge, Generation Y are more interested in problem based learning, Weiler (2005).

**Low boredom threshold;** In the media, Generation Y is often described as having low boredom thresholds and short attention spans. The research identifies very diverse views on this.

**Multitasking and parallel processing;** Generation Y are most comfortable when they are engaged simultaneously in multiple activities such as listening to music, texting and writing. This is simply a way of life for them. The information overload will increase as technology continues to advance and all generations will respond by multitasking. Consequently, spending time on investigating a problem will be a luxury Weiler, (2005).

**Visual, nonlinear and virtual learning;** Visual modes of learning are preferred by a large percentage of the population, and are especially important for Generation Y who grew up with lots of visual stimuli<sup>9</sup>. Generation Y are also described as holistic learners – oriented towards a nonlinear and non-sequential learning Faust, Laherty and Manuel (2001).

**Collaborative learning;** Generation Y do not want isolated lecture based information: they value interaction, networking, active participation and staying connected anytime, anyplace. Literature also describes the increasingly 'horizontal' structure of learning: *"Institutional learning tended to be authoritative, top down, standardized and predicated on individuated assessment measure on standard tests. Increasingly today, work regimes involve collaboration"* Davidson and Goldberg (2009).

### Theoretical Framework

This paper was pegged on Mitra and Rana (2001) theory of **"minimally invasive education"**; this theory begin to challenge some of the fundamental assumptions about learning in general and learning with technology in particular, that underpin most of the formal systems of education.

In 1999, Sugata Mitra and his colleagues dug a hole in a wall bordering an urban slum in New Delhi, installed an Internet-connected PC, and left it there (with a hidden camera filming the area). What they saw was kids from the slum **playing around with the computer and in the process learning how to use it** and how to go online, and then teaching each other. In the following years they replicated the experiment in other parts of India, urban and rural, with similar results, challenging some of the key assumptions of formal education Mitra (2003). The "Hole in the Wall" project demonstrates that, even in the absence of any direct input from a teacher, **an environment that stimulates curiosity can cause learning through self-instruction and peer-shared knowledge** which he calls it "minimally invasive education."

Mitra (2003) states that the current system actually worked quite well in the past, before computers brought information to our fingertips in seconds, and before globalization and technology transformed what types of skills we will need for the future. The role of the teacher was, and often currently is, to impart information and help children develop a prescribed set of skills in reading, writing, and math. The world has changed since our education system was conceived, but schooling has not. He believes children can learn from one another, and the role of the teacher should be to ask the big questions, step back and admire, and let learning happen through the use of the Internet and self-directed learning (Mitra et al (2005)). Mitra argues that current education is not applicable but rather irrelevant, and unless learning should give learners the opportunity to solve problems that speak to them, work collaboratively and creatively, and learn to harness the power of technology in meaningful ways, it will fail to prepare them for a future that we cannot define (Mitra (2003)).

Mitra argues that we keep saying our schools are broken, yet the imposition of relentless assessment, standardized testing, teacher "evaluations" and curriculum prescriptions run counter to the process Mitra is proposing for shifting our pedagogy towards meeting 21<sup>st</sup> century needs. Our teachers/lecturers are being burdened instead of supported, and have fewer opportunities to push forth innovative ways of learning, especially in urban schools or poor communities. They may have access to technology, but often its purpose is to transfer the old method of learning to an online format or be used for online tests, rather than the engaging ways because learning is not confined to school, and interest-driven, self-directed and collaborative learning is happening naturally in all kinds of non-formal environments (Paradowski (2014)). This theory was applicable since the paper sought to find out the best learning technique that prepares learners to meet the challenges of 21<sup>st</sup> century workplace.

### **Need for Study**

Africa's higher education institutions face a decline in quality of education, learning and research (Ginette et al (2008)). Universities operate with overcrowded and deteriorating physical facilities, limited and obsolete library resources, insufficient equipment and instructional materials, outdated curricula, unqualified teaching staff, poorly prepared secondary students, and an absence of academic rigor and systematic evaluation of performance. Lack of access to the global knowledge pool and the international academic environment has a big contribution. There is a widespread concern in the relevance of curricula, as expressed by the overall mismatch between programs of study and labor market requirements (Ginette et al (2008)). Institutions are generally ineffective at preparing students with applicable skills and reflecting the needs of the employment market. For example, agricultural education and training is often out of synch with labor market demands in terms of knowledge and practical competencies, especially in agribusiness, basic management and problem solving (Richard and William (2007); World Bank (2002)). Education and training curricula tend to be obsolete and disassociated from the economy. Practical instruction receives insufficient emphasis, and students have little opportunity to develop technical competencies, problem solving experience or communication and organizational skills. Absence or lack of effective regional, national and institutional quality assurance and enhancement systems and agencies in African countries and universities further exacerbate the problems of quality and relevance. Which raises the question is the standardized class learning still relevant for preparing 21<sup>st</sup> century workforce or there is need to change to meet

ever changing workplace demands? In this study from the past reviews it was concluded that business and community leaders, policy makers, and educators need to work together so that future workers will have the workplace skills necessary to succeed.

### Methodology

The study was a case study of Karatina University. The university has 5 schools namely; school of business, pure and applied sciences, Environmental and natural resources, Education and School of Agriculture. From the five schools the third and fourth years were targeted who were 560 learners. The third and fourth years were selected purposively because they have attended industrial attachment which gives learners practical experience to apply what they learnt in theory in classes. Out of 560 learners 35% were randomly selected using schools as the strata to get the study sample of 196 learners who were involved in the actual study, out of 196 questionnaire there were 174 valid ones giving a response rate of 88.7%.

### Discussion of Findings

Out of the 196 questionnaires administered there were 174 valid questionnaires giving a response rate of 88.7%. From the survey results 98.9% of the learners were aged between 18-25 years, 52.3% female and 47.7% male with 51.1% of the learners in fourth year and 47.7% in their third year of study as illustrated in Table 1.

Table 1:  
Background Information

Age	Frequency	Percent
No response	1	.6
18 – 25	172	98.9
26 – 35	1	.6
<b>Total</b>	<b>174</b>	<b>100.0</b>
Gender		
Male	83	47.7
Female	91	52.3
<b>Total</b>	<b>174</b>	<b>100.0</b>
Academic year		
Third	83	47.7
Fourth	89	51.1
No response	2	1.1
<b>Total</b>	<b>174</b>	<b>100.0</b>

### Lecture learning technique

According to 55.7% of learners lecture can meet the particular needs of the learners, 46% agreed that lectures can present large amount of information easily, 56.3% agreed that lecture can be presented on large audience and 55.2% agreed that the lecture method allows the instructor to have maximum control of learning experience.

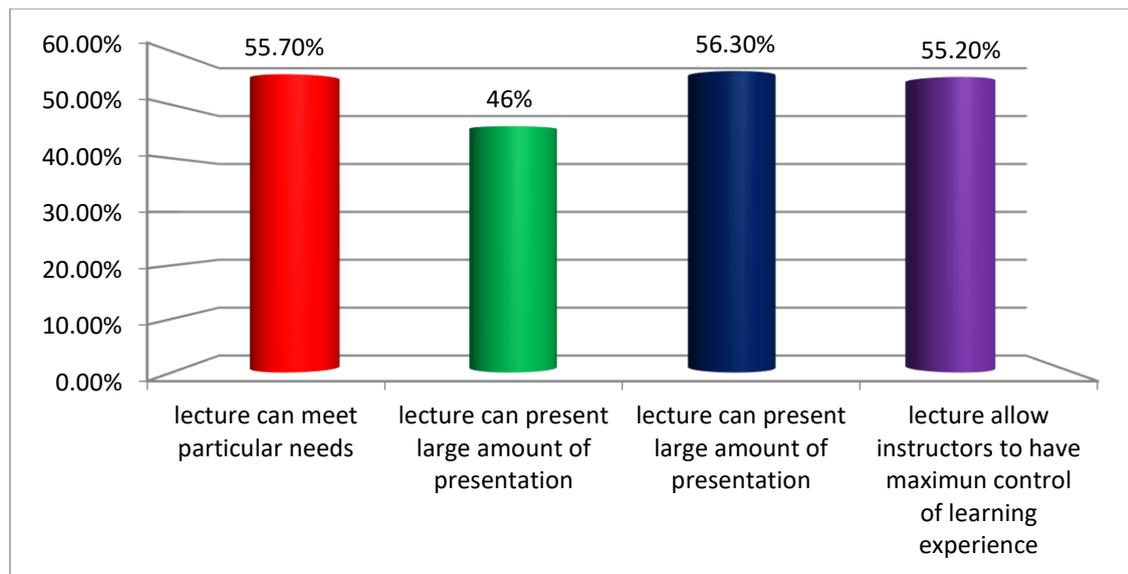


Figure 1: Reason for fondness of lecture method

Past studies done by organization such as Society for Human Resource Management (2006) agree that in the past, companies did not worry about an individual wants and desires. They usually implemented a one-size-fits-all management philosophy to fit everyone's needs. If some employees did not or could not conform to the organization's policies and practices, companies encouraged these people to leave. That is no longer true. Research conducted by Mercer Human Resource Consulting found that different generations of employees required different management strategies for recruiting, retaining, and motivating workers. Employers are rethinking traditional practices as the era of standardized benefits and work requirements gives way to a more custom built model. Many organizations are helping young workers create customized career paths; they may offer professional development opportunities such as training, adding new responsibilities, or offering monetary rewards and stay-on bonuses. According to Seng et al., (2003), the social cognitive learning is divided into two types: (i) observational learning which emphasizes learning by watching others; also called modeling; and (ii) cognitive behavior modification (CBM) which utilizes both modeling and self-instructional verbalization.

However, other learners were opposed to lecture method because of following reasons, 70.7% of the learners agree that there is no feedback provided on extent of learning, 74.1% learners are always passive recipients and there is no mechanism of ensuring their intellectual engagement, 56.9% agree that learners attention span is usually very little, 54% agree that the method is not suitable for learning abstract materials while 74.7% agree that the lecture method require effective speakers. From the interviews, learners believe that the lecture learning technique meets the demands of learning but does not prepare learners and there is need to blend it with the new methods that are current.

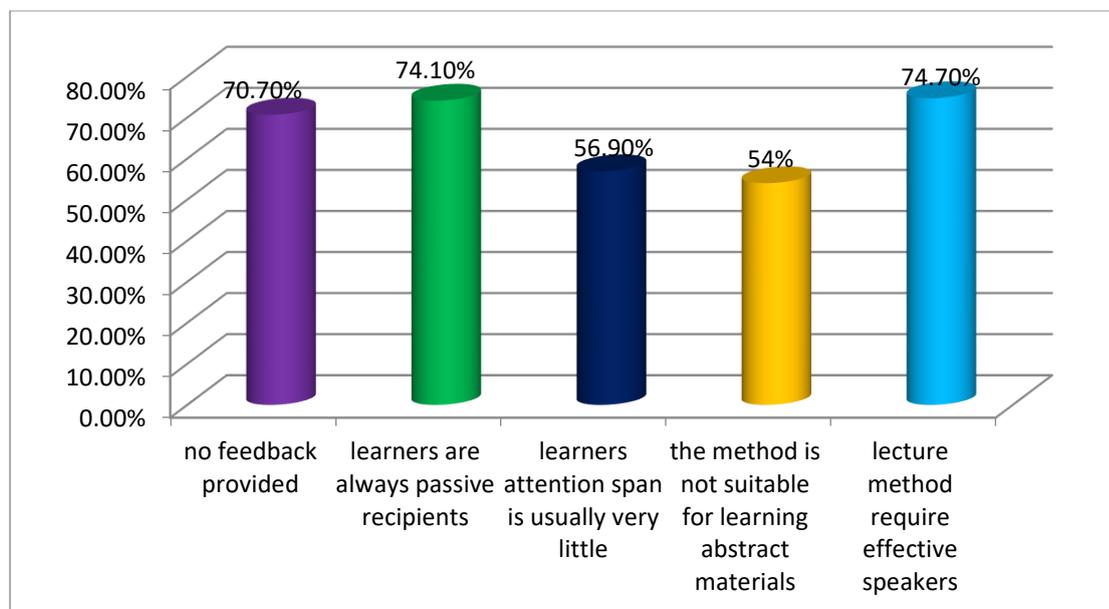


Figure 2: reasons for opposing lecture methods

These findings were supported by past studies; Jones and Black (1995) suggest that universities should offer more practicum courses that prepare learners to work. Hsiao and Chen (2004) proposed that teaching in technical universities have existed some problems, which is more theory oriented rather than application oriented. Emad and Roth's (2008) study about maritime education and training systems shows that education and training did not help knowledge to transfer to the job requirement nor to fulfill the targeted objectives. The reasons underlying the outcome are: The formal education is not obtained for competence at work; rather it is a compulsory requirement to enable individuals a passing grade in certain written and oral examination. Students are acquiring the kind of knowledge that helps them pass the test rather than obtain job related competency. Instructors believed that students did not need to understand and it is good enough if the students know the correct answer. The end result is that these individuals learn what they learned to obtain the job rather than to carry out the job.

### Online Learning Technique

The study revealed that online learning has the following benefits in meeting 21<sup>st</sup> century workforce needs; 55.2% agree that they get training in multiple locations, 48.9% agree that the programmes can be customized to meet workplace needs, 45.4% agreed that it allows them to develop and practice new skills that can be applied. Dede (2005) posits that technology offers the potential to provide students with new ways to develop their problem solving, critical thinking, and communication skills; transfer them to different contexts; reflect on their thinking and that of their peers; practice addressing their misunderstandings; and collaborate with peers—all on topics relevant to their lives and using engaging tools. The River City Multi- User Virtual Environment (MUVE) project is an example of a technology-based educational tool that seeks to accomplish each of these objectives. Although the program "has the look and feel of a video game," it is based on U.S. national biology and ecology standards Dede (2005). Participating students enter a 19<sup>th</sup> -century virtual environment, in which they learn to behave as health scientists to help explain why people are getting sick.

They collaboratively identify problems with their online peers, form and test hypotheses, and draw conclusions about underlying causes, Ontario Ministry of Education (2010).

According to 38.5% of the learners support that it is effective for refresher training, 38.5% agree that it is a cost effective technique, Lee (2012) supports that there are also many other examples of web-based forums through which students and their peers from around the world can interact, share, debate, and learn from each other. For example, through the Deliberating in a Democracy program, students from Colombia, Ecuador, Mexico, Peru, and the United States share their perspectives with international peers on various topics that range from corruption and judicial independence to the environment to public health and then vote on different policy decisions.

According to 37.4% agreed that it is flexible which is supported by Society for Human Resource Management (2006) which found out that the traditional brick-and-mortar organization with a full-time staff and highly structured hierarchy is making way for a more fluid and flexible organizational structure, with a core of ever-shifting network of suppliers and vendors all working together permanently or temporarily to accomplish a single project. Scheef and Diane (2004) support that new work arrangements such as telecommuting, virtual teams, and use of temporary professionals have changed the makeup of the workplace. Organizations are relocating to the suburbs where land, resources, and labor are cheaper. More workers are telecommuting or working out of remote offices or from their own homes. To compete globally, many multinationals are offshoring or outsourcing to low-cost emerging economies such as India and China. Also 33.3% agreed that it fosters uniformity in content and 50% agreed that it is cost effective.

Also 48.7% of learners support that the online learning is interactive, Perkins. (2008) posits that the Internet itself also provides a forum for students' development of 21<sup>st</sup> century skills and knowledge. The nature of the Internet's countless sources, many of which provide inconsistent information and contribute substantive source bias, provide students with the opportunity to learn to assess sources for their reliability and validity. It gives them an opportunity to practice filtering out information from unreliable sources and synthesizing information from legitimate ones. Once they know where to look for legitimate information, students can use the Internet as a reference source in countless ways.

However, the online learning according to most learners faces following challenges; 88.5% requires computer literacy, 82.2% access to computers, 50.6% lack of interaction with trainers, 55.7% not good for one-time learning and 78.2% agreed that some programmes are poorly designed and thus trainees lose concentration and morale as shown in Table 3. Also, from the interview it was revealed that although learners believe that this method would prepare them to meet the 21<sup>st</sup> century workplace needs the University has not adopted this method to meet the needs Y generation learners and compared to their industrial attachment experience the learners feel that University should emphasize on online learning techniques.

There is broad consensus that technology holds great promise for education. It has not yet lived up to this promise, in part because teachers have not had the opportunity to learn to maximize its pedagogical value. Without direction, teachers tend to use it to mimic the

transmission model. If students use technology only to listen to lectures, read text, and regurgitate information to their teachers, they encounter all of the pitfalls.

### **Skills Based Training**

The skills based learning is more of practical learning technique and according to the learners most of them agreed that the technique enables learners to; 75.9% acquire skills that are immediately applicable in workplace, 74.1% enables trainers to immediately gauge learners' understanding, 79.9% has high engagement and concentration span, 71.3% makes training fun and enjoyable and 64.9% agree that it provide means of passing knowledge. The learners feel that the technique allow them to meet the 21<sup>st</sup> century workplace needs because; 82.2% empower meeting new skill-set needs, 90.2% it has the ability to adapt new technology while maintaining skills to address the old systems, 69% enables moving from task oriented to service and solution provision, 73.6% moving from centralized decision to empowered decision making system, 69% moving out of intuitive to fact-based analysis and decision making, 65.5% empowers employees to move from routine to non-routine work and 68.4% agree that it allows learners to move away from adequate skills to well-educated and proficient skills. From findings learners believe that this is the best method to prepare they meet the workplace needs. However, the technique is almost non-existent in the institutions of higher learning and learners agree that they faced a lot of challenges during their industrial attachment since they did not have the required skills. Lauder, Brown and Ashton (2008) note that because of the strong supply of technically competent graduates employers in their survey were more concerned with soft skills in recruiting staff. That is, given a sufficient supply of suitably qualified labour, employers are able to discriminate between applicants at a more fine-grained level Young (2010). But even here, soft skills are contextualized; for example, the soft skills required in the hair-dressing industry will be different to those required in the science laboratory and skills that was needed in 1990 may not be needed in 2014 but the higher skills training level remains the same over the years leading to challenge of meeting the workplace needs.

### **Problem based learning and 21<sup>st</sup> Century workplace**

The study results shows that learners support problem based learning because of its ability to; 61.5% development of functional learning process, 58.6% development of self-assessment skills, 46.6% critical thinking ability, 32.2% promotion of in-depth learning, 35.6% collaboration and integration between disciplines and subjects, 43.1% promotes knowledge retention by creating enjoyable and stimulating environment, 50.6% promotes proactive learning beyond individual roles, 48.9% gives reference to day to day job requirements in workplace, 47.7% creating mechanism for learners abilities recognition, 53.4% gives direction for learning new job skills and 54% sets clear expectation for learners to enable them make decisions and work more effectively. The rapid pace of social, economic and technological change is main reason for the emphasis on generic skills in policy in learning. This result is exemplified by the World Bank (2007) which argues that in 21<sup>st</sup> century workforce people need new competencies for the knowledge economy which is no attainable in the current learning techniques. The OECD (2010c) posits a skills which include basic skills and digital age literacy; academic skills; technical skills; generic skills; soft skills (appropriate emotions and behaviours, multicultural awareness and understanding, receptiveness. For example in Australia this emphasis on generic skills is expressed as employability skills in VET and graduate attributes in higher education. All VET qualifications must include employability

skills (DEEWR 2011), and the Commonwealth Government is attempting to develop indicators for generic skills as well as discipline specific indicators in higher education (DEEWR 2009a).

When further asked how problem based learning empowers learners to meet workplace need because 42% agreed that it gives learners morale, 47.7% empowers learners to meet employers demands, 50% enable overcoming workplace problems and make learners results oriented, 54.6% makes learners flexible to work anywhere, 57.5% agree that technique enables learners meet technological changes while 66.1% agreed that technique opens learners minds to creativity.

Although the technique is the second after skills based training according to learners it is not fully implemented and it is only in form of questions and answers which sometimes does not correlate with practical workplace. The learners suggest that the problems should be derived from the 21<sup>st</sup> century workplace scenario and be applicable in real life such as dummy projects. Volmari et al (2009) explain that competence is context-dependent (triological learning). Thus its assessment is linked to the prevailing valuations and the operating environment. The OECD (2010c) in citing debates about generic skills says that problem solving, for example, takes place within a certain work environment and culture and is influenced by routine procedures as shown in Figure 3.

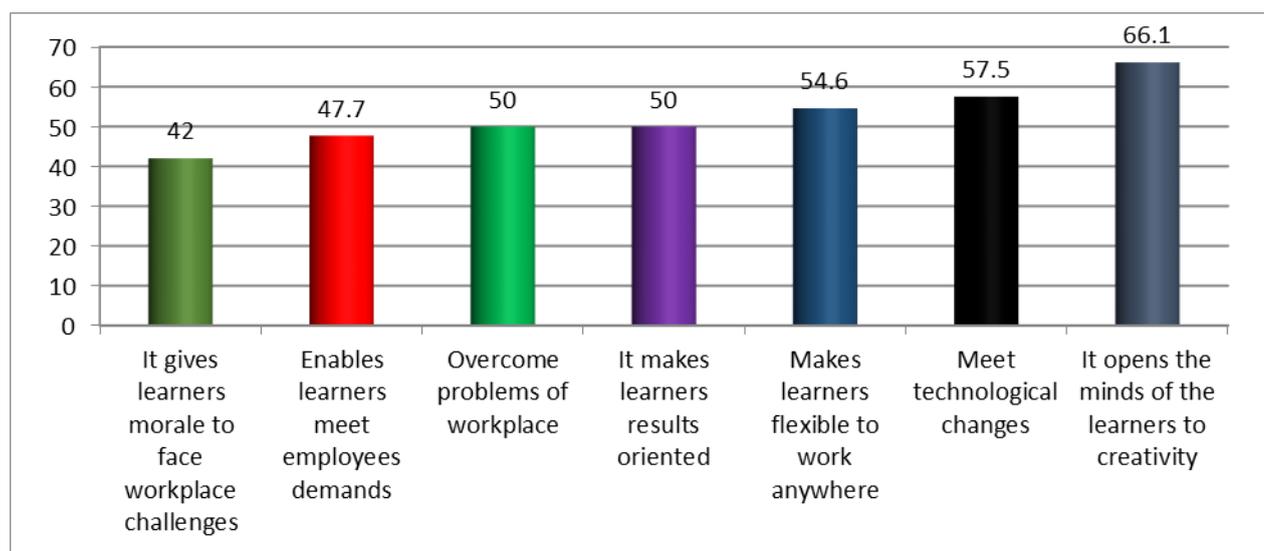


Figure 3: Problem based learning and 21<sup>st</sup> Century workplace

### Learning Methods and workplace needs

Lecture method of learning is the most common used in Kenya institutions of higher learning and from the survey when asked if they think lecture method prepares them to meet the 21<sup>st</sup> century workplace needs and challenges 54.6% of the learners agreed while 43.1% disagreed. According to 70.7% of the learners online learning prepares them to meet the 21<sup>st</sup> century workplace needs and challenges as compared to 24.7% who opposed. Furthermore 75.9% of the learners support that skill based training also prepares them with 13.8% who disagreed and finally 74.1% agreed that problem based learning helps learners meet the 21<sup>st</sup> century workplace needs as shown in Figure 4.

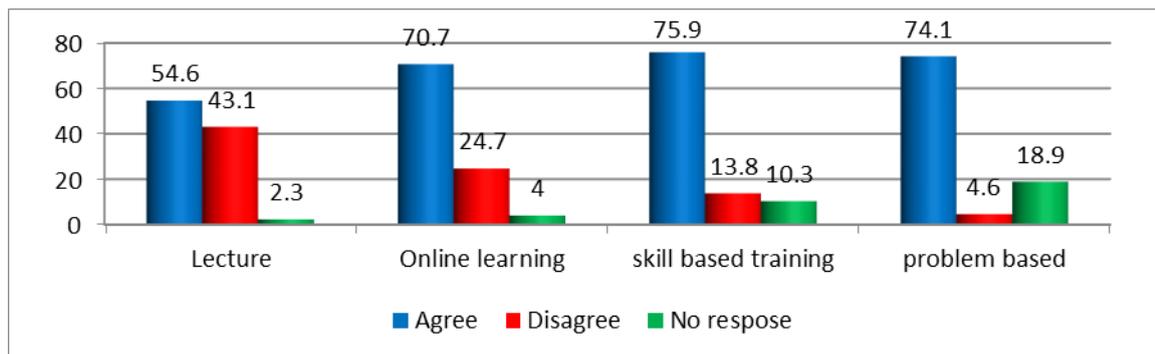


Figure 4: Learning methods and workplace needs

**Level of application of learning technique**

The study results indicates that although learners agree that different techniques can help them achieve the 21<sup>st</sup> workplace needs and challenges the level of application of this techniques differs. The lecture method is most commonly used as supported by 60% of the learners, followed by online learning 12% application, problem based 10% of learning and skills based 6% application in learning process as shown in Figure 5.

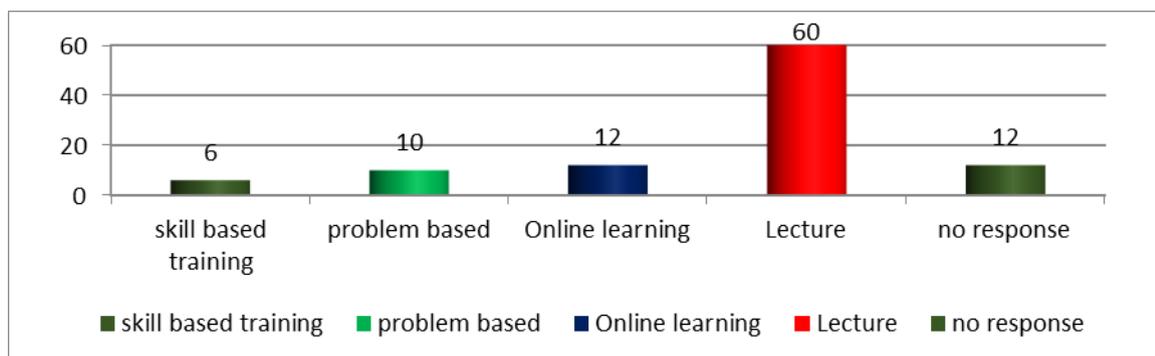


Figure 5:Level of application of learning technique

**Best Learning technique for 21<sup>st</sup> Century workplace**

Finally the study sought to establish from the four techniques the best technique that enables learners meet the workplace challenges 81.3% were in support of hybrid of all techniques, 71.3% were in favor of online training, 68.4% problem based 45.4% skills based with 18.4% supporting the lecture method as shown in Figure 6.

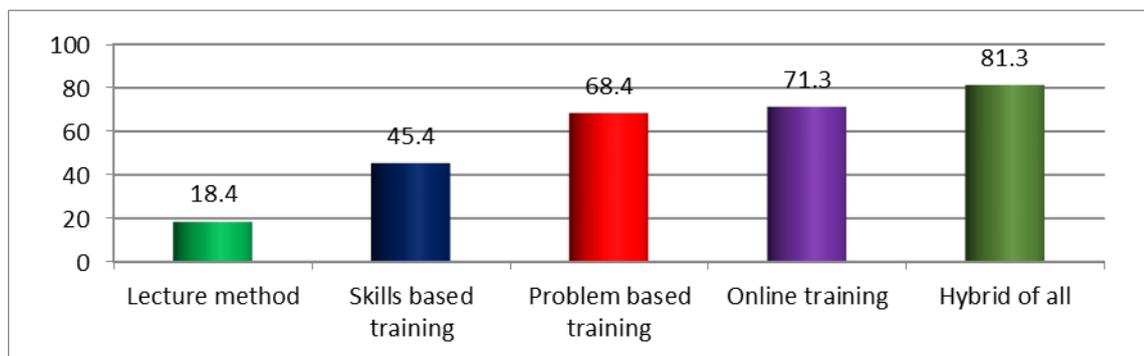


Figure 6: Best Learning technique for 21<sup>st</sup> Century workplace

## **Conclusion**

The paper indicates that there is need to institutions of higher learning to change the way learning is conducted which is supported by past studies. Although lecture method is commonly used learning technique the study showed that it does not help learners get prepared for the demand of the 21<sup>st</sup> century workplace. This is because of some shortcomings such as inability to estimate learners understanding, learners being passive and inability to disseminate abstract contents.

Online learning technique is mainly technology oriented and for the fact that the 21<sup>st</sup> century workplace is full of technology and the Y generation employees are technological survey the technique is in agreement with their needs. The technique enables learners to access knowledge in flexible and cost effective manner, the content can be customized to meet their needs and uniformity can be maintained. The workplace in current scenario is flexible and employees can work at comfort of their homes.

Skills based learning in other hand empowers both trainers and employees to acquire skills and retain them and have actual measure of establishing the knowledge retention and understanding of concepts. The techniques enable learners to grasp concepts easily. Also the learners can be able to acquire new skills, blends new technology while retaining skills to meet the old systems, decentralization of decision that is not based intuitive to fact-based decision making and also promoting learners from adequate skills to well-educated and proficient skills.

The problem based technique was found to be one of the effective methods of learning, since it enables learners meet the needs of 21<sup>st</sup> century workplace because it develops functional learning process, develops self-assessment skills, critical thinking ability, promotes in-depth learning, creates collaboration and integration between disciplines and subjects, promotes knowledge retention by creating enjoyable and stimulating environment, promotes proactive learning beyond individual roles. It also gives reference to day to day job requirements in workplace, creates mechanism for learners abilities recognition, gives direction for learning new job skills and sets clear expectation for learners to enable them make decisions and work more effectively. Furthermore, the technique gives learners' morale, empower them to meet the demands of employer, makes learners overcome problems and be results oriented, it also empowers them to be flexible and work in any environment. The technique also gives the learners ability to meet the technological changes and have a mind that is open to creativity. Finally study showed that the best technique for the 21<sup>st</sup> century workplace according to the learners is the hybrid of the four techniques and individually online, problem based, skills based and lecture method respectively followed in that order.

This shows that although the methods used in the institutions of higher learning, lecture is the common and mostly used by the lecturers. Learners suggest that although they online, skills based and problem based techniques are being used the rate at which is being used is very minimal and sometimes does not exist in some courses. From their experience on industrial attachment learners agree that there is need to blend the four leaning technique not only to meet the demands of 21<sup>st</sup> century workplace but also make learning appealing for the Y generation learners who are employees of tomorrow.

### Recommendations

Many students receive an excellent education in high school, go on to college and eventually find their way to rewarding careers. But this is not always the case, this is happening not because the learners aren't smart enough or don't know what's good for them but because institutions of higher learning have become too focused on making students work eligible without making them sufficiently prepared for 21<sup>st</sup> century workplace needs and challenges. From this study the following recommendation were made; It is time for institutions of higher to take bold step and change the on-size fit all system of teaching where learners are taught using only one method of lecture. This is because the technique is not involving or challenging enough for learners to learn and retain applicable concepts that may help them in future. Although other techniques such as online learning, skills based and problem based learning techniques were being used their level is still minimal and according to the learners applications of this four techniques' can adequately prepare learners for the 21<sup>st</sup> century workplace needs. Therefore institutions of higher learning should increase the use of online learning, skills and problem based learning techniques.

### References

- American Management Association (AMA). (2010). *Executives say the 21<sup>st</sup> century requires more skilled workers*. Retrieved from
- Aspen Institute. (2007). *Beyond NCLB: Fulfilling the promise to our nation's children*. Washington, DC: Aspen Institute.
- Aubert, J., & Reiffers, J. (2004). *Knowledge economies in the Middle East and North Africa: Toward new development strategies*. Washington, DC: World Bank.
- Bartley, S., Ladd, P., & Morris, M. (2007). Managing the multigenerational workplace: Answers for managers and trainers. *CUPA-HR Journal*, 58(1), 28-34. Retrieved from EBSCOhost
- Business-Higher Education Forum. (2005). *A commitment to America's future: Responding to the crisis in mathematics & science education*. Washington, DC: Author.
- Caldwell, J., Toman, N., and Leahy, J. (2006) *Diversity and difference in the learning experience of students in contemporary mass Higher Education*. Paper presented at NUI Galway 4th Annual Conference on Teaching & Learning 8-9 June 2006
- Cennamo, L., & Gardner, D. (2008). Generational differences in work values outcomes and person-organisation values fit. *Journal of Managerial Psychology*, 23(8), 891-906. Retrieved October 10, 2010 from ABIINFORM global. (Document ID: 1591442681)
- Chang, V. & Guetl, C. (2010). Generation Y Learning in the 21st Century: Integration of Virtual Worlds and Cloud Computing Services. In Z. Abas et al. (Eds.), *Proceedings of Global Learn 2010* (pp. 1888-1897). AACE. Retrieved March 5, 2014 from <http://www.editlib.org/p/34388>. © 2010 AACE
- Clark, R. (2000). Building expertise: Cognitive methods for training program. *Performance Improvement Journal*, 39, 43-44.
- Croker, Richard (2007). *The Boomer Century 1946–2046: How America's Most Influential Generation Changed Everything*. (New York, NY: Springboard Press, 2007).
- Davidson, C. and Goldberg, D. (2009) *The Future of Learning Institutions in a Digital Age*. MIT Press: London.

- Dede, C. (2009a). Determining, developing, and assessing the skills of North Carolina's future-ready students. Friday Institute White Paper Series, Number 2 (May). [www.fi.ncsu.edu/whitepapers](http://www.fi.ncsu.edu/whitepapers)
- Dede, C., Korte, S., Nelson, R., Valdez, G., & Ward, D. (2005). Transforming education for the 21st Century: An economic imperative. Chicago, IL: Learning Point Associates.
- Department of Education Employment and Workplace Relations (2009a), *An Indicator Framework for Higher Education Performance Funding*, DEEWR, Canberra, <<http://www.deewr.gov.au/HigherEducation/Documents/HIEDPerformanceFunding.pdf>> viewed 27 January 2014.
- Emad G. and Roth W. (2008). 'Contradictions in the practices of training for and assessment of competency: A case study from the maritime domain'. *Education Training*, 50(3): 260-272.
- Faust, J., Ginno, E., Laherty, J. and Manuel, K. (2001) Teaching information literacy to Generation Y: Tested strategies for reaching the headphone-wearing, itchy mouse-fingered, and frequently paged. A poster session for the *Association of College and Research Libraries (ACRL) 10th National Conference*, Spring 2001, California State University, Hayward.
- Federal Reserve Bank of Dallas. (2004). Whatd'ya know? Lifetime learning in pursuit of the American dream (2004 Annual Report). Dallas, TX: Author. <http://www.dallasfed.org/fed/annual/2004/ar04.pdf>
- Ferguson, R.L. (September, 2007). Foundational skills: The currency that purchases opportunity in tomorrow's workplace. *Techniques*, 82(6), 62.
- Friedman, T. L. (2005). *The world is flat: A brief history of the twenty-first century*. New York: Farrar, Straus, and Giroux.
- GinetteAzcona, Rachel Chute, Farah Dib, LoveenaDookhony, Heather Klein, Daniel Loyacano-Perl, DominicRandazzo and Vanessa Reilly (2008). *Harvesting the Future: The Case for Tertiary Education in Sub-Saharan Africa*. The Maxwell School of Syracuse University, 229 pp.
- Glass, A. (2007). Understanding generational differences for competitive success. *Industrial and Commercial Training*, 39(2), 98-103. Retrieved October 10, 2013, from ABIINFORM Global. (Document ID: 222418811).
- Gonczi, A. (2001). *Advances in educational thinking and their implications for professional education*. Working Paper 01-14, UTS Research Centre for Vocational Education, Sydney. Retrieved April 6, 2009 from [http://www.oval.uts.edu.au/working\\_papers/WP01.14AGonczi.pdf](http://www.oval.uts.edu.au/working_papers/WP01.14AGonczi.pdf)
- Hsiao H.C. & S. C. Chen.(2001). "Process of curriculum development for engineering education". in the proceedings of 2<sup>nd</sup> Russian Seminar on Engineering education. UICEE: Tambov. Russia. Pp. 27-29. [http://www.p21.org/documents/21st\\_century\\_skills\\_education\\_and\\_competitiveness\\_guide.pdf](http://www.p21.org/documents/21st_century_skills_education_and_competitiveness_guide.pdf)  
<http://www.p21.org/documents/CriticalSkillsSurveyExecutiveSummary.pdf>
- Lee, S.-K. (2012). *Preparing 21<sup>st</sup> century teachers: Singapore's approach*. New York, NY: International Summit on the Teaching Profession.
- Mitra, S. & Rana, V (2001). Children and the Internet: Experiments with minimally Invasive education in India. *British Journal of Educational Technology*, 32 (2) pg 221-232. <http://www.hole-in-the-wall.com/docs/Paper02.pdf>

- Mitra, S. (2003). Minimally Invasive Education: A progress report on the "Hole-in the-wall" experiments. *British Journal of Educational Technology*, 34(3), 367–371
- Mitra, Sugata, RituDangwal, ShiffonChatterjee, Swati Jha, Ravinder S. Bisht and PreetiKapur (2005), Acquisition of Computer Literacy on Shared Public Computers: Children and the "Hole in the wall," *Australasian Journal of Educational Technology*, 21(3), 407–426.
- National Academy of Science. (2006). Rising above the gathering storm: Energizing and employing America for a brighter economic future. Washington, DC: National Academy Press.
- National Association of Colleges and Employers (NACE). (November 2009). *NACE research report: Job outlook 2010*. Online.<http://www.naceweb.org>.
- Ontario Ministry of Education. (2010). *Building a national education system for the 21st century: Case study Finland*. Retrieved from <http://www.edu.gov.on.ca/bb4e/materials.html>
- Organization for Economic Co-operation and Development (2010c), *The OECD Innovation Strategy Getting a Head Start on Tomorrow* OECD, Paris, <[http://www.oecd.org/document/15/0,3746,en\\_2649\\_34273\\_45154895\\_1\\_1\\_1\\_1,00.html#HTO](http://www.oecd.org/document/15/0,3746,en_2649_34273_45154895_1_1_1_1,00.html#HTO)>viewed 7 February 2014.
- Paradowski, Michał B. (2014) Classrooms in the cloud or castles in the air? *IATEFL Voices* 239, 8–10.
- Partnership for 21st Century Skills. (2006). *Key Findings: Are they ready to work? Employers perspective on the basic knowledge and applied skills of new entrants to the 21st century workforce*. [http://www.p21.org/documents/key\\_findings\\_joint.pdf](http://www.p21.org/documents/key_findings_joint.pdf)
- Partnership for 21st Century Skills. (2008). *21st Century skills, education & competitiveness: A resource and policy guide*. Tucson: Partnership for 21<sup>st</sup> Century Skills
- Perkins. (2008). Dimensions of causal understanding: The role of complex causal models in students' understanding of science. *Studies in Science Education*, 41(1), 117–165.
- Randstad USA. The Randstad (2006) Employee Review. [www.us.randstad.com](http://www.us.randstad.com). 2006.
- Richard Johanson and William Saint (2007). Cultivating Knowledge and Skills to Grow African Agriculture. A Synthesis of Research Commissioned by the World Bank. 116 pp.
- Roberts, G. (2003) *Joint consultation on the review of research assessment: consultation by the UK funding bodies* Available from <http://www.ra-review.ac.uk/reports/roberts.asp> [last accessed 8 March 2014]
- Robinson, S.J. & Garton, B.L. (2007). An assessment of the employability skills needed by College of Agriculture, Food and Natural Resources graduates at the University of Missouri-Columbia. *Proceedings of the 2007 AAAE Research Conference*, 34, 385-401.
- Rodd Wagner and James K. Harter. (2006). 12: The Elements of Great Managing (Gallup Press, December <http://gmi.gallup.com/content/28270/The-Fourth-Element-of-Great-Managing.aspx>)
- Scheef, Devon, and Diane Thielholdt (2004). "Engaging Multiple Generations Among Your Workforce." Linkage Inc. [www.workinfo.com](http://www.workinfo.com).
- Schuele, K. & Madison, R. (January 2010). Navigating the 21st century job search. *Strategic Finance*. 49-53.
- Society for Human Resource Management (2006), The Conference Board, Corporate for Working Families, the Partnership for 21st Century Skills. "Are They Really Ready to

- Work?" Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st century U.S. workforce report. 2006.
- Stevens, P., & Weale, M. (2003). Education and economic growth. London: National Institute of Economic and Social Research. Retrieved September 23, 2005, from <http://www.niesr.ac.uk/pubs/dps/Dp221.pdf>
- Sujansky, J. & Ferri-Reed, J. (2009). *Keeping the millennials: Why companies are losing billions in turnover to this generation-and what to do about it*. New Jersey, John Wiley & Sons, Inc.
- Tapscott, D. (2009) *Grown up digital: How the next generation is changing the world*. McGraw-Hill: London.
- Temple, J. (2001). Growth effects of education and social capital in the OECD countries (CEPR Discussion Paper No. 2875). Bristol, England: University of Bristol. Retrieved September 23, 2005, from <http://www.nuff.ox.ac.uk/Users/Temple/abstracts/edfinal2.pdf>
- Volmari, K., Helakorpi, S. and Frimodt, R. Eds. (2009), *Competence Framework for VET Professions: Handbook for practitioners*. Luxemburg, CEDEFOP, Finnish National Board of Education
- Weiler, A. (2005) Information-seeking behavior in Gen Y students: Motivation, critical thinking and learning theory, *The Journal of Academic Librarianship*, 31(1), pp. 46-53.
- World Bank (2002). *Constructing knowledge societies. New challenges for tertiary education*. 236 pp. Washington D.C., the World Bank.
- World Bank (2007), *Building knowledge economies: advanced strategies for development*, from <http://siteresources.worldbank.org/KFDLP/Resources/461197-119990709064/BuildingKEbook.pdf> viewed 19 January 2014.
- Young, M. (2010), Why educators must differentiate knowledge from experience, *Pacific-Asian Education* 22(1): 9-20.

Benefits	SD		D		N		A		SA		NR	
	F	%	F	%	F	%	F	%	F	%	F	%
Online programs are effective for training across multiple locations	13	7.5	11	6.3	12	6.9	96	55.2	28	16.1	14	8.0
They can often be customized or custom designed to meet workplace needs	14	8.0	12	6.9	21	12.1	85	48.9	23	13.2	19	10.9
They are good for helping learners develop and practice new skills	11	6.3	17	9.8	5	2.9	79	45.4	49	28.2	13	7.5
They are useful for refresher training. They are applicable to self-directed learning.	16	9.2	24	13.8	21	12.1	67	38.5	31	17.8	15	8.6
They can be cost-effective because the same equipment and program can be used by large numbers of learners	13	7.5	25	14.4	17	9.8	67	38.5	43	24.7	9	5.2
They are flexible are available 24 hours a day, 7 days a week.	11	6.3	32	18.4	16	9.2	65	37.4	35	20.1	15	8.6
Some programs are interactive, requiring trainees to answer questions, make choices, and experience the consequences of those choices. This interaction generally results in greater comprehension and retention among learners	9	5.2	26	14.9	29	16.7	84	48.3	17	9.8	9	5.2
They are uniform, which makes it possible to standardize training in the universities	19	10.9	34	19.5	28	16.1	58	33.3	25	14.4	10	5.7
They are measurable. When computers are used for training, it is possible to track what each learner has learned right on the computer	23	13.2	36	20.7	23	13.2	66	37.9	17	9.8	9	5.2
They save the learner money on travel expenses,	10	5.7	13	7.5	9	5.2	87	50.0	39	22.4	16	9.2

learners can learn from anywhere											
<b>Challenges</b>	<b>Agree</b>		<b>Disagree</b>		<b>No response</b>						
	<b>Freq</b>	<b>%</b>	<b>Freq</b>	<b>%</b>	<b>Freq</b>	<b>%</b>					
These programs require trainees to be computer literate	154	88.5	12	6.9	7	4.0					
They require trainees to have computer access	143	82.2	22	12.6	9	5.2					
There is little or no interaction with a trainer; if trainees have questions, there's no one to ask	88	50.6	73	42.0	12	6.9					
They are not the best choice for new or one-time training.	97	55.7	59	33.9	17	9.8					
Some poorly designed programs are "boring" and result in trainees having a poor retention rate of the material as well as a low finish rate	136	78.2	25	14.4	13	7.5					

**Appendices**

**Table 2: Benefits of Lectures**

<b>Benefits</b>	<b>Agree</b>		<b>Disagree</b>		<b>No response</b>	
	<b>Freq</b>	<b>%</b>	<b>Freq</b>	<b>%</b>	<b>Freq</b>	<b>%</b>
Lectures can be specifically organized to meet the needs of particular audiences	97	55.7	56	32.2	21	12.1
Lectures can present large amounts of information	80	46.0	72	41.4	22	12.6
Lectures can be presented to large audiences	98	56.3	46	26.4	30	17.2
Lectures allow the instructor maximum control of the learning experience	96	55.2	53	30.5	25	14.4
<b>Challenges</b>						
Lectures fail to provide instructors with feedback about the extent of student learning	123	70.7	30	17.2	21	12.1
In lectures, students are often passive because there is no mechanism to ensure that they are intellectually engaged with the material	129	74.1	32	18.4	13	7.5
Students' attention wanes quickly after fifteen to twenty-five minutes	99	56.9	55	31.6	20	11.5
Lectures are not well suited for teaching complex, abstract material	94	54.0	59	33.9	21	12.1
Lectures requires effective speakers	130	74.7	19	10.9	25	14.4

**Table 3: Online Learning Technique**



**Table 4: Skills Based Training**

Benefits	Agree		Disagree		No response	
	Freq	%	Freq	%	Freq	%
They are immediately applicable to trainees' jobs	132	75.9	34	19.5	8	4.6
Skills training will allow trainers to immediately determine whether a trainee has learned the new skill or procedure	129	74.1	31	17.8	14	8.0
Interactive sessions keep trainees engaged in the training, which makes them more receptive to the new information	139	79.9	23	13.2	10	5.7
They make training more fun and enjoyable	124	71.3	40	23.0	10	5.7
They provide ways for veteran employees to pass on knowledge and experience to newer generation	113	64.9	50	28.7	11	6.3
<b>How it prepare learners for 21<sup>st</sup> c workplace</b>						
Empower meting the new skill-set needs (like, science, technology)	143	82.2	14	8.0	17	9.8
Ability to adapt to changing technology while maintaining skills to address older system	139	79.9	24	13.8	11	6.3
Enable moving from task-oriented work assignments to providing services and solutions	120	69.0	40	23.0	14	8.0
Moving from slow, centralized decision-making to rapid, empowered decision-making by employees	128	73.6	37	21.3	9	5.2
Moving from intuitive decision making to fact-based analysis and decision making	120	69.0	39	22.4	15	8.6
Moving from routine work to non-routine work	114	65.5	52	29.9	8	4.6
Moving from adequate skills to well-educated and highly proficient skills	119	68.4	45	25.9	10	5.7

**Table 5: Problem Based Learning**

Benefits	SD		D		N		A		SA		NR	
	F	%	F	%	F	%	F	%	F	%	F	%
Enables me developed enhanced functional knowledge	14	8.0	7	4.0	2	1.1	107	61.5	3	17.8	1	7.5
It enables me to develop of the skills of self-assessment	8	4.6	1	9.1	1	8.0	102	58.6	2	13.8	1	5.7
Helps me to learn and evaluate critical reasoning (problem-solving) skills	1	7.7	1	8.0	1	6.3	81	46.6	4	24.7	1	6.9
Promotes deep rather than surface learning	5	2.9	2	12.1	2	14.3	56	32.2	4	24.7	2	13.2
Promotes collaboration and integration between disciplines and subjects	1	6.9	1	6.3	2	16.7	80	46.0	2	14.4	1	9.8

Promotes retention of knowledge Creates learning environment which is more stimulating and enjoyable both for students and teachers	1 5	8. 6	1 2	6. 9	2 5	14 .4	75	43. 1	2 7	15. 5	2 0	11. 5
Enables learners to be more proactive beyond their individual roles by learning additional skills that are valued by the society	1 4	8. 0	2 0	11 .5	1 1	6. 3	88	50. 6	2 5	14. 4	1 6	9.2
Offers a reference resource for day-to-day job requirements	6	3. 4	2 3	13 .2	1 5	8. 6	85	48. 9	2 9	16. 7	1 6	9.2
Provides a mechanism for recognition of learners abilities	7	4. 0	1 5	8. 6	2 2	12 .6	83	47. 7	2 6	14. 9	2 1	12. 1
Provides clear direction for learning new job skills	1 4	8. 0	2 1	12 .1	7	4. 0	93	53. 4	2 4	13. 8	1 5	8.6
Sets clear expectations for learners, enabling them to make better decisions and work more effectively in future	1 0	5. 7	1 3	7. 5	8	4. 6	94	54. 0	3 1	17. 8	1 8	10. 3