

Impact of Multiple Intelligences and 21st Century Skills on Future Work Force

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Abstract

In an era where the success of our schools is determined by standardized examinations, it is critical to allow students to utilize their creativity and the power of technology to enhance vital skills and learn in innovative ways. In today's fast-paced technological environment, we are on the verge of a technology revolution that will modify and unfold several professions in realm of education. It is critical that the educational system make an instructional transition in order for pupils to prosper as future innovators. In order to understand how students' talents may have been impacted by various intelligences by engaging in the real-world experiences that may boost confidence and self-esteem, this article examines the 4Cs of 21st century skills in relation with Bloom and Digital Bloom's Taxonomy. It also emphasizes how a 21st-century education will enable students to be creative and critically examine situations, allowing them to improve academic and social skills as they communicate and collaborate with others to organize their ideas, preparing these young minds for the workforce once they graduate. The intention of suggesting the 21st century plan to the school management and detailing the potential benefits of the educational system is to prepare the upcoming young generation for the future workforce in today's fast growing competitive and challenging environment.

Keywords: 21st century skill curriculum, Blooms taxonomy, future workforce, critical thinkers, multiple intelligences

1. Introduction

In our past experiences, education used to largely focus on learning the relevant information for each subject area based on memorization method, where the content understanding was then tested with quizzes and examinations at the conclusion of each course. So, in science, a student would study the periodic table of elements first, and then take a test on the periodic table's symbols (hydrogen, chlorine, and iron). This memorization-based educational system would be unable to train future workers, potentially resulting in a lack of motivation and low self-esteem (Trilling & Fadel, 2009).

The world's complexity has established a degree of creativity required to solve its difficulties. To gain more independence, high-achieving people regularly choose to leave the traditional labor market and develop their own jobs (Driscoll, 2021). One of the most important roles of education is to train future workers who face difficulties during their day to day routine. The type of work that the majority of people will require to do in the next decades and making sure that it can be done anywhere by anybody with the necessary skills, access to technology and internet. However, in order to have these specialist workers, every country must have an education system that produces them; as a result, education has become the key to economic survival in the 21st century. Educators' responsibility in the 21st century is to assist every student in learning how to learn, promoting "creativity," "collaboration," and "critical thinking," as well as teaching the need of successful "communication." In order to flourish in today's and tomorrow's dynamic workplaces, students must learn these skills (Hallerman et al., 2019).

In order to satisfy society's needs for a workforce in the 21st century, school districts around the country have begun re-visioning and revamping instructional curricula. A curriculum is a framework and mandated course of study that students must complete in order to graduate from a certain level of education. It acts as a "floor plan" or template for what will be taught in order to define student learning expectations. It acts as a road map for educators, establishing criteria for student achievement and teacher responsibility (Williams, 2020). The vision of a society is determined by the curriculum of any institution, which defines what information, understanding,

and skills are most useful to its people and what knowledge is worth passing on utilizing 21st century educational skills. In recent years, the demand for curriculum reform has grown in order to better educate pupils for a fast-changing world. The need to guarantee that pupils have the abilities and attitudes necessary for the 21st century has generated interest in curricular revisions (Gouëdard et al., 2020).

Traditional curricula have been criticized for being overly restrictive since they tend to focus on the uniform character of the authorities' guidelines. Despite being built in a progressive manner, some abilities required for the next generation of workers are still lacking (McMahon, n.d.). Students learn by memory and recitation in traditional classrooms, which does not teach critical thinking, problem-solving, or decision-making abilities (Davis, 2021). Whereas speaking of international education system, the IB learner profile, defines comparable elements of 21st century learning, is used in the International Baccalaureate curriculum. As IB learners strive to be inquirers, collaborators, open minded, caring, and thinkers, they strive to be inquirers, collaborators, critical thinkers, problem solvers, intercultural understanding, and lifelong learners, all of which are essential characteristics and skills for the 21st century learner to reach their full potential (Jones, 2013). Also, Cambridge International is a skill-based curriculum and inquiry-based strategy that engages learners beyond disciplinary boundaries and facilitates 21st-century abilities such as teamwork, communication, creativity, research, and inter-disciplinary understanding (Burt, 2021).

The creation of a 21st century curriculum would benefit students in the long run, though there may be some constraints along the way, such as the financial cost that would be borne by management or the curriculum development department, which would include all of the necessary resources to create a challenging curriculum, as well as the maintenance of digital technology integration, which would have an impact on students' confidence and self-esteem.

Many administrators are responsible for determining what these requirements are, how to fulfill them, and how to adapt existing curricula. Many times, educational leaders have not been adequately prepared for, nor do they have a complete knowledge of, what is anticipated, and the desire for change to fulfill the objectives of a 21st century skills educational program is challenging even with the most experienced educational leaders (Johnson, n.d). Having stated that, one of the drawbacks of reforming a new curriculum might be dealing with the opportunity cost. It may take a significant amount of time, money, and human resources to make it happen (Gouëdard et al., 2020). That is the reason that in most countries, students are still taught a "one-size-fits-all" curriculum through rote learning and assessments, which may lead to disengagement and lack of enthusiasm among students, since far too many students appear to struggle with learning (Driscoll, 2021).

Although today's digital native generation is at ease with technology, they still rely on educators for planning out the curriculum, online teaching and learning to educate them through digital means as part of suitable course delivery and covering of lesson outcomes/objectives as part of online assessments (Hyndman, 2018). This digital native generation has grown up with a level of technology that allows them to access an incredible amount of data. These youngsters have never gone a single second without using technology. Generation Alpha students make up the present student body (Driscoll, 2021). Generation Alpha pupils, born between 2010 and 2025, and are regarded to be younger than technology such as smartphones, iPads, smartboards, Instagram, and music streaming applications like Spotify. This is the first generation that the 22nd century is anticipated to witness in substantial numbers (Navigate360, 2021). Schools are preparing generation Alpha by embracing modern technologies and learning. In order to create the best possible learning environment for Gen Alpha student, they show a strong inclination for gamification of schooling and a strong concentration on problem solving. As a result, a curriculum that includes higher order thinking abilities, multiple intelligences, technology and multimedia, multiple literacies, and authentic assessments is essential (Education In Japan Community, 2010). A well- developed curriculum forms a basis for preparation of future workers, who are pre skilled and are ready to take up challenges in today's competitive environment. Businesses all across the globe concur that a massive "21st century skills gap" is costing them a lot of money. According to some estimates, over \$200 billion is spent annually on locating and employing scarce, highly qualified individuals, as well as costly training programs to bring new employees up to requisite skill levels. And, as budgets tighten even more in these difficult economic times, businesses want highly qualified staff who can hit the ground running without incurring additional training and development fees (Trilling & Fadel, 2009).

2. Purpose of Study

The goal of this study is to find ways to prepare the students as confident future workers by developing curriculum with the use of Bloom's Model and Blooms Digital Taxonomy to incorporate 21st century skills such as multiple intelligences and multiple literacies, and in order to create higher order thinking skills in students,

which would help them to prepare them as skilled and critical thinkers to solve any real life situations. An action research intervention approach will be utilized to build this new curriculum. This research will also suggest to look in to 21st century skilled alumni's work force and would be compared with the traditional studied curriculum, most preferably private schools dealing with the international curriculum and public schools based on the national state or district curriculum as intervention plan as part of the qualitative research analysis.

2.1 Students' Confidence and Self-Esteem as Future Worker in the 21st Century

External factors such as students' emotional well-being affecting as future workers are related to the independent variables in this study, which includes students' confidence and self-esteem, which may move in a positive direction with the implementation of 21st century curriculum. The annual planned curriculum could be successfully developed for schools; nevertheless, correct integration of authentic assessments increases learning standards (Fletcher & Shaw, 2012) especially with the 21st century skills. Furthermore, in order to ensure the students' growth, educators have to adapt to the new constant changes that today's society endures (Puertas Molero et al., 2019) pertaining to 21st century technological skills.

Students will not be able to perform from understanding to assessing abilities of the subject matter, if they are not well equipped with the 21st century skills of critical thinking in the learning process, as a consequence of not being effectively trained by the educators, resulting in a poor confidence level. The problem-solving techniques can help students to build effective and efficient thinking abilities (Miterianifa et al., 2021). As a result, students' confidence and self-esteem reflect their readiness to overcome challenges in life as shown by their capability to succeed (Psychology, n.d.).

In the 21st century, there are numerous expectations to be flawless at work, at home, and in social contexts, and low self-esteem is a serious issue in today's culture. Students in the 21st century must learn to be "successful" in an information-driven economy in order to encourage themselves to improve their social-emotional well-being (Cuban, 2019). Motivation is a driving force that is linked to one's emotional and social well-being and allows one to act and pursue a goal to succeed in today's competitive environment (Cherry, 2020).

3. Literature Review

Workers nowadays require a different set of talents than in the past to succeed in today's innovation-driven economy. Changes in the labor market have increased the need for these abilities and skills needed to survive in the economy. Around the world, economies are based on creativity, invention, critical thinking, and collaboration, all of which are aided by technological integration. As a result, various skills must be introduced into the educational system to compete with the world's complexity in order to thrive economically in the twenty-first century labor market.

3.1 21st Century Education Skills

The term "21st century skills" encompasses a wide range of information, skills, work habits, and personality qualities (Trilling & Fadel, 2009). Educators, school reformers, college instructors, and employers all believe that these abilities are vital for success in today's society, especially in postsecondary programs and modern vocations and workplaces. The partnership for 21st Century Skills created this popular framework (P21). The framework combines knowledge, particular skills, expertise, and literacies to describe the skills, knowledge, and expertise students must master to excel in business and life (Buckle, n.d.). In general, 21st century skills may be employed throughout a student's life in all academic subject areas, as well as in all educational, vocational, and civic situations (21st century skills, 2016). Modern students need four abilities to excel in school and in the profession. "Critical thinking" to be employed by the young minds in problem solving and reasoning, which will be further evaluated and interpreted, which will help in comprehending the subject. Artistry, curiosity, imagination, and personal expression are all products of "creativity" and invention. "Communication" encompasses not only public speaking and presenting, but also how successfully a message is transmitted and the ability to listen in order to critically study and solve problems (Battelle For Kids, n.d.). "Collaboration" with the team members is required in order to collaborate in the day-to-day operations of the workplace. In today's challenging competitive work environment, developing leadership skills to facilitate and lead the team for future prosperity using virtual workspaces with knowledge of information and communication technology (ICT) literacy, media and internet literacy, data interpretation and analysis is essential (Hallerman et al., 2019). These abilities educate young minds for future labor forces as they prepare to enter the professional world as businesspeople, educators, and scientists. With that said, in today's education profession, instructors who lack digital skills are experiencing a significant lot of worry. One of the research states that the teacher autonomy and public trust in teachers are eroding, leaving teachers feeling disempowered and discouraged, according to recent studies in the United Kingdom, Japan, and Hong Kong. This is due to the fact that today's educators lack

technological and digital literacy, resulting in a shortage of 21st century skilled workers (LeTendre, 2021).

The findings of the Programme for the International Assessment of Adult Competencies (PIAAC) of 2014 revealed that adults in 24 nations had a literacy proficiency rate of 16 percent, while numeracy competency was 19 percent. However, just 6% of adults had the greatest degree of expertise when it came to problem-solving with technology (World Economic Forum, 2015). However, it is seen that the pandemic is already leaving an indelible mark on the education of future professional development educators in the field of education. As modifications and new rules are made, standards and curriculum are steadily evolving. In response to the pandemic, numerous educator preparation programs in the United States are adding more about digital technology, online education, and mental and emotional welfare to their curricula (Franko, 2021) which is beneficial for the workers to enhance their analytical, critical thinking analysis in preparation for 21st century skills.

3.2 21st Century Curriculum

The conventional curriculum strategy is to pass on society's inherited information, usually through a transmission model aided by textbooks and certain set of out dated policies. A progressive curriculum, on the other hand, aims to *build skills and dispositions so that students may fulfill their particular personality and contribute to society's betterment as active citizens* (Drake & Reid, 2020). Redesigning existing curriculum to improve learners' 21st century abilities is the first step in shifting educational paradigms. A well-designed curriculum that incorporates 21st-century skills is required for educators to help students as future employees with the ability to use critical thinking and problem-solving approaches (Pedersen & O'Neill, n.d.), which society lacks, resulting in societal issues such as poor self-esteem and lack of confidence. The position of the instructor and the student in today's classroom alters when 21st century skills are used.

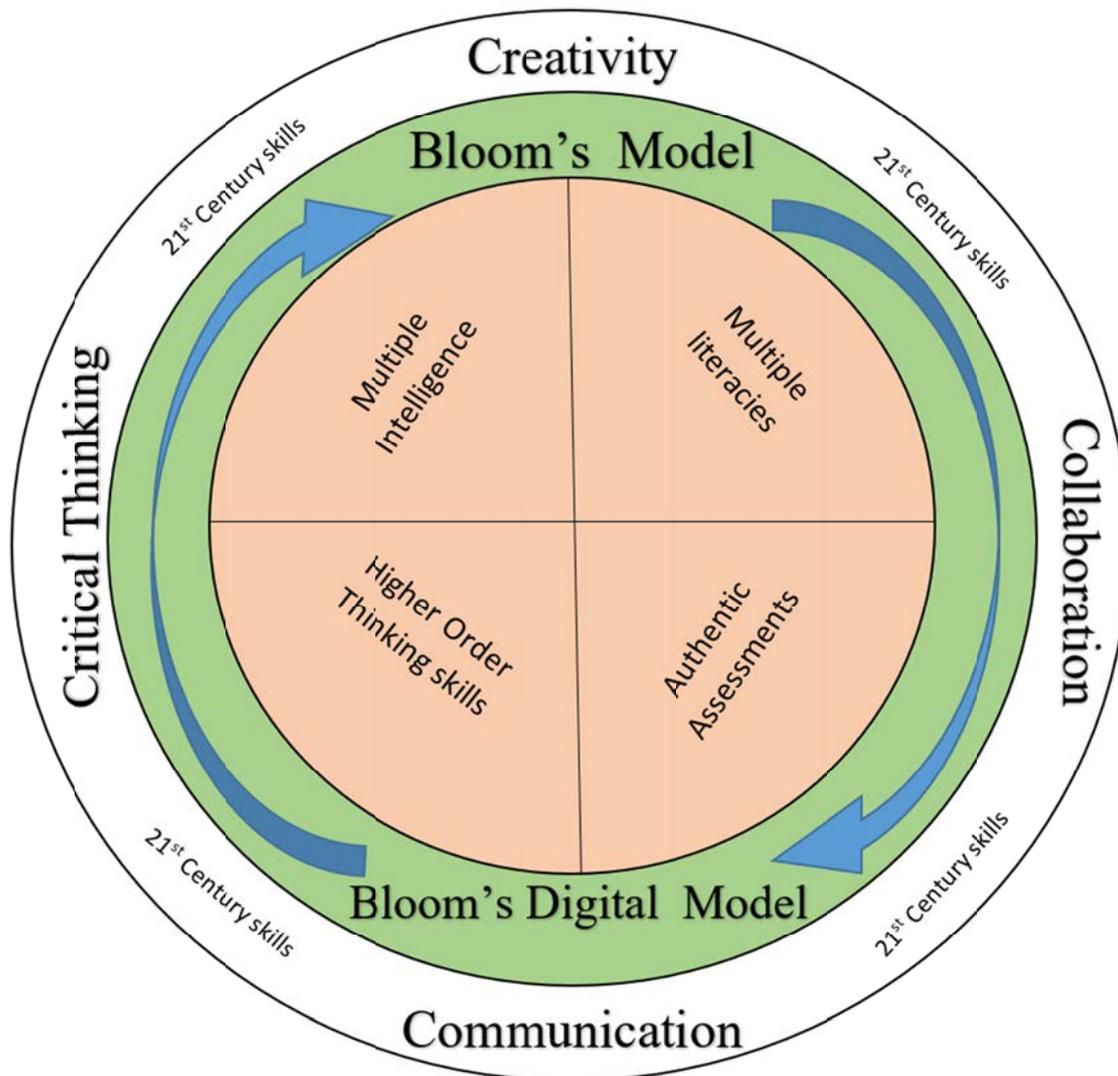
In the framework of the academic courses of 21st century curriculum should mix knowledge, thinking, innovative skills, media, Information and Communication Technology (ICT) literacy, and real-world experience (Alismail & McGuire, 2015) as students are encouraged to ask questions and engage in social discourse. However, the collective and individual effectiveness of 21st century skills deployment in curriculum is dependent on having such skills to be prepared for the professional world. Many students in the United States are taught these skills—those who are lucky enough to attend highly productive schools or at the very least have wonderful teachers, but it is a matter of chance rather than conscious design of this educational system. Skills that have traditionally been the domain of the few must become universal if we are to have a more equal and successful public education system (Rotherham, 2009). Not everyone has the chance to be born in a lavish environment, according to a Canadian study 59 million children in poor nations do not have access to basic education. The quality of education is a major concern, even after four years of schooling, 250 million students are unable to read, write, or count. Many young people in developing nations who have not had a good education lack the basic and advanced abilities needed for employment and life (GAC, 2017).

The new focused skills of the 21st century create the classroom a learner-centered environment, with the instructors paying close attention to students' knowledge, abilities, and beliefs. However, the technical refinement required for the 21st century is unavoidable and the problems with technology, can be a source of difficulty for schools. Finance plays a significant role in everything from hardware purchases to curriculum development. Curriculum, assessment, and instruction must all function in harmony, which necessitates extensive planning and design thinking—as well as continual teacher training (TeachThought, 2021). A greater focus on skills has significant consequences for teacher training in 21st century skills. Teachers must be educated about a wide range of topics and be prepared to make in-the-moment judgments as the lesson plan advances in order to teach these skills (Rotherham, 2009).

Bloom's Taxonomy and Bloom's digital Taxonomy can be used as an approach to create new curriculum for 21st century skills. The taxonomy's new version is aimed as a genuine tool for curriculum preparation, instructional delivery, and evaluation is emphasized. The revised Bloom's Taxonomy is being used to plan and deliver an integrated English and History course because it has the sensibility to integrate "multiple intelligences and multiple literacies," as well as critically examining and assessing with a common language in order to translate and discuss specific subject or content areas. Furthermore, assisting in the comprehension of more complicated levels of thinking skills (Higher Order Thinking Skills) (Forehand, n.d.).

Bloom's digital taxonomy (BDT) has made it easier for educators to construct student-centered activities bringing new challenges to curriculum by shifting the focus from instructors to students. The majority of students and instructors in today's tech-savvy culture are familiar with and be competent in the use of digital tools to boost academic achievement. 21st century literacy skills cover a specific component of digital

comprehension. Educators and students may gain the fundamental information they need to understand which devices perform which functions and why (Stauffer, 2020a). However, schools and curriculums are currently debating whether or not certain types of calculators should be used in the classroom, as they basically addressed the problems for children who struggled with math, resulting in a misalignment of technology and 21st century curriculum, where creativity and collaboration is seen as a concern (TeachThought, 2021).



Source: Researcher's 21st century curriculum plan model

3.3 Multiple Intelligence

Howard Gardner's Multiple Intelligence Theory was first published in Howard Gardner's book, *Frames Of Mind* (1983), and quickly gained a reputation as a classic model for understanding and teaching many aspects of human intelligence, learning style, personality, and behavior - in both education and industry. According to Howard Gardner, multiple intelligences indicate diverse intellectual talents, whereas learning styles are the manner in which an individual handles a variety of tasks (Edutopia, 2016). The notions of much intelligence and the VARK or VACT learning styles models were established to provide relatively easy and accessible techniques of knowing. The well-known VARK model, created by Neil Fleming, was used to approach and deal with multiple intelligences. Neil Fleming later devised the VARK model in 1987, which integrated Howard Gardner's Multiple Intelligence Theory (Poth, n.d.).

Gardner's idea has been slammed by psychologists and educators both. These detractors claim that Gardner's

concept of intelligence is too wide, and that his eight “intelligences” are nothing more than a collection of talents, personality traits, and abilities (Cherry, 2019). Learning style, on the other hand, may be a very successful way to approach these intelligences in order to understand and deal with the world whether it be in classroom or professionally in the working environment as it prepares the workers of tomorrow creating a sense of collaboration, looking into the creativity, where students can critically analyze using higher order thinking skills, and communicating effectively with the audience (Stauffer, 2020b).

“Visual-spatial” intelligence is a skill that allows people to visualize objects. People with this intelligence are good in reading maps and directions. People with high “linguistic-verbal” intelligence can utilize words well in both writing and speech. These people are usually excellent at composing tales, remembering facts, and reading. People with high “logical-mathematical” intelligence are skilled at thinking, identifying patterns, and solving problems rationally. These people have a tendency to think in terms of numbers, connections, and patterns. Body movement, activity, and physical control are thought to be excellent for those with strong “bodily-kinesthetic” intelligence. People with good hand-eye coordination are usually good in this field (Marens, 2020). People with a high level of “musical intelligence” may think in terms of patterns, rhythms, and sounds. They have a great musical appreciation and are frequently talented in musical composition and performance. Those with high “interpersonal” intelligence are adept at comprehending with others through effective communication. People with high “intrapersonal” intelligence are skilled at recognizing their own emotional states, feelings, and motives. “Naturalistic” intelligence people are more in tune with nature and are frequently interested in nurturing, exploring the environment, and learning about other animals (Kurt, 2021).

3.4 Multiple Literacies

The capacity to read and write is referred to as literacy. Literacy has evolved in today’s technology-driven society with the help of Blooms Digital taxonomy to include the capacity to communicate effectively. ‘New literacies’ or ‘multi literacies’ are terms used to describe multiple literacies. The notion is founded on the assumption that people use methods other than traditional reading and writing to ‘read’ the world and make sense of information (Bales, 2019). This has a strong link with the VARK model and Bloom’s Taxonomy, and this technique may be utilized for 21st century learning skills, where students and future employees can assess and critically analyze situations utilizing higher order thinking abilities. Individuals in modern culture, must learn how to create information from a variety of sources and ways of representation. The four basic categories of literacy are visual, literary, digital, and technical literacy.

The capacity to grasp, analyze, and evaluate/ assess information offered through visuals such as photos, photographs, symbols, and videos is referred to as visual literacy, which is not only limited to visualizing and learning (Bales, 2019). Assessments and activities should be matched with specified learning objectives in order to give experience with and reinforcement of the abilities underpinning “visual literacy” in curricula and courses designed to enhance visual literacy. While attempting to assess pupils’ visual literacy level, Bloom’s taxonomy highlights cognitive skills associated with the process of visualization. The ability of scientists in the 21st century to generate and analyze visual representations is critical to their success. With properly developed and appropriate visual literacy, the contents included within visual representations may be better comprehended and presented to the audience using Blooms Taxonomy levels (Arneson & Offerdahl, 2018). Most people equate “textual literacy” with the traditional meaning of literacy. At its most basic level, it refers to a person’s capacity to understand and communicate effectively through writing, such as literature and paperwork. Textual literacy, on the other hand, is more than just reading information, as it has to be analyzed, interpreted, and evaluated through a very keen eye (Bales, 2019).

3.5 Technological and Digital Literacy

Digital technology has the ability to change the game in the field of education, which is always evolving as a result of technological breakthroughs. Technology provides educators with new ways to develop and stimulate the minds of students. Educational technology tools facilitate communication and knowledge transfer (Lathan, 2021).

Technological literacy relates to the usage of apps, whereas digital literacy refers to the use of digital sources in connection to blooms digital taxonomy. For example, to access social media, online audio/video sites, or texting messages (technological literacy), websites and smart phones are utilized as sources (Digital Literacy). Individuals’ ability to comprehend, evaluate, and interpret information obtained from digital sources, on the other hand, should possess the knowledge, understanding, and sense of application of critical analysis in order to determine whether a source is credible, as well as acting responsibly, such as adhering to copyright laws (Lestari & Santoso, 2019).

According to a research, various Western countries have tried for more than 30 years to integrate digital technology

into teaching and learning. As a result, international organizations such as the European Union, the OECD, and UNESCO have pushed for policies that promote IT integration in schools, recognizing the importance of such integration for teaching and learning as part of cognitive development and the skills required to thrive in a digital society (Raposo et al., 2020). However, some institutions are attempting to deal with technology integration, as more than 600 K-12 instructors complained insufficient assistance when using technology in the classroom in a research performed by a corporation that aids schools with technology (Willen, 2004).

3.6 Higher Order Thinking Skills

As a trustworthy workforce in the 21st century, higher-order cognitive abilities are required and in order to succeed in today's workforce, students must master 21st-century abilities. Problem solving, decision making, critical thinking, and creative thinking are the four categories of HOTS.

Problem-solving abilities assist you in swiftly and successfully resolving challenges. It's one of the most important talents that companies look for in job candidates, since employees with these abilities are more self-sufficient. Problem-solving abilities necessitate swiftly recognizing the underlying problem and putting a solution in place (Doyle, 2020). Employers routinely rate decision-making as one of the most important abilities. Despite the fact that students are faced with vital life decisions, decision-making skills are rarely taught. Decision skills, according to research, may boost student performance and become an important aspect of high school curriculum to prepare them for the 21st century labour market (GaryPage, 2017).

From Plato and Socrates to John Dewey, educational thinkers have emphasized the need of critical thinking. Good communication, metacognition, self-direction, motivation, and other relevant qualities are required to display critical thinking. Other cognitive, interpersonal, and intrapersonal skills are also connected with critical thinking. Many scholars, for example, have shown a link between creativity and critical thinking (Evans, 2020). Creative thinking is described as a method of approaching and solving issues from a new viewpoint, avoiding conventional answers and thinking beyond the box. It is a process to meet new challenges and seek solutions. According to Steve Jobs, creative thinking is gained through experience (Design, 2016).

Differentiation is used in conjunction with thinking skills to assist educators guarantee that students receive proper classroom experiences by employing a variety of methods of teaching or thinking skills (lower to higher) to meet the needs and abilities of all students (Finley, 2017). Some students are intrinsically motivated as a result of instructors' creative use of technology to foster higher-order thinking abilities (Sneed, 2016). According to the Creative Educators, most educators, even if they start with the lower order of remembering and recalling, focus mostly on higher order thinking. It's important to remember, too, that children students can't go straight to manufacturing complex goods and ideas (the highest level) unless they've mastered key lower-level skills like remembering and understanding (Cochran, 2021).

Workers in the twenty-first century need a mix of information-processing skills, such as literacy, numeracy, and problem solving, as well as "generic" skills, such as interpersonal communication, self-management, and the ability to learn, to help them navigate the turbulence of a rapidly changing labor market (OECD, 2013).

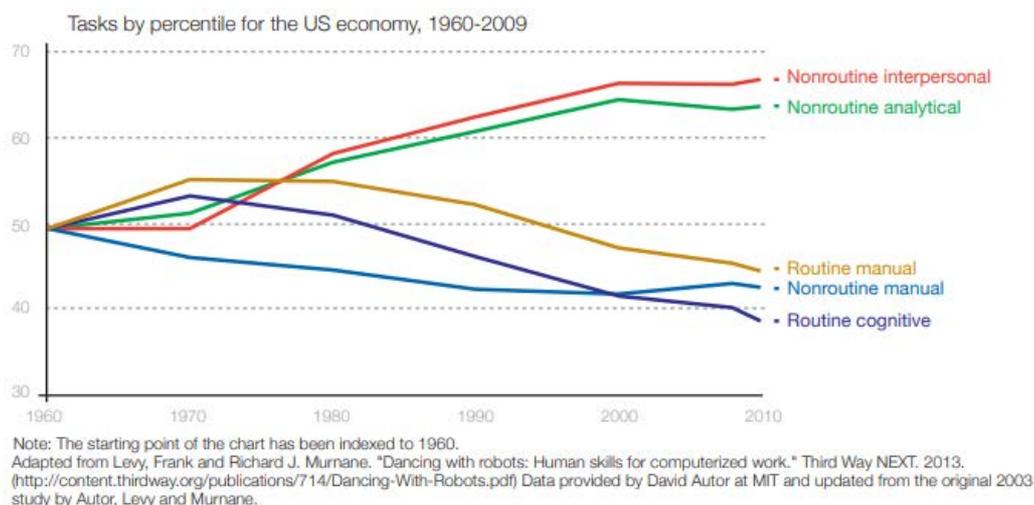


Figure 1. High demand for higher order thinking skills in labour market of US economy (1960-2009) 2014 report (Source: World Economic Forum, 2015)

According to a 2014 World Economic Forum research, the demand for higher order thinking abilities such as effective communication, cooperation, critical thinking, reasoning, and analyzing has risen dramatically in the US economy. The need for regular cognitive and craft skills is dropping as manufacturing and other low-skill work in the services sector become more mechanized, while the demand for information-processing abilities and other high-level cognitive and interpersonal skills is increasing (World Economic Forum, 2015).

The University of North Carolina's Learning Center reports on issues that university students experience with tests that are predominantly based on higher-order thinking abilities. Classes may be more rigorous (though they appear to be less structured), students may be required to read more, and professors may be less accessible. As a result, pupils who are accustomed to high school strategies may discover that they are no longer efficient (UNC, 2020).

Another research states that the teachers and other professionals have historically had lower expectations of disabled children, which has resulted in more low-order thinking objectives imposed via drill and repetition exercises, but if given a fair chance and the right support and method, these students may become problem solvers. On the other side, advocates believe that without a solid foundation in fundamental ideas, students would be unable to learn the skills necessary to thrive in the profession (Watson, 2019).

Today's educators are using technology to replace old models of standardized, rote learning with more personalized, self-directed experiences for their students, with more multi-device software synchronization that supports multiuser collaboration in accordance with Bloom's and digital taxonomy; and support for virtual conversations, both within and outside the classroom, in recognition of 21st century learning skills (Kim, n.d.). By mixing lower and higher level experiences with ICT tools and a blended learning approach, students would develop a firm foundation of content and skills, as well as the analytical and evaluative abilities to apply them (Cochran, 2021).

3.7 Authentic Learning and Assessments

Authentic learning and assessments often employ role-playing exercises, problem-based activities, case studies, and involvement in virtual communities of practice to focus on real-world, complicated problems and their answers. When it comes to assessing student learning in a course, most instructors think that the best evaluation is one that not only tests student learning but also teaches and develops students' skills and comprehension of course content (Levin, 2020). The approaches are being used by colleges and institutions around the country in an effort to enhance the way students acquire, retain, and transfer knowledge in order to educate future workers with the ability to critically examine, analyze, and evaluate situations. Students now have access to many of the same resources that professionals utilize in their study thanks to today's Web-based learning settings. Students who have access to American Civil War archives can develop their own judgments about the period's history and society. Students are able to utilizing uncommon or expensive equipment to do experiments and analyze data for themselves, thanks to internet access to distant instruments. Physical and Geographical barriers are eliminated because of online and technology with great access to course materials (Nguyen, 2021). However, they may be dealing with partial and ambiguous information as a result of this procedure, recognizing the complexities of real-life research where there may not be a single correct solution (Lombardi, 2007). Technology may also be a source of concern for some countries that are either underserved in terms of internet availability.

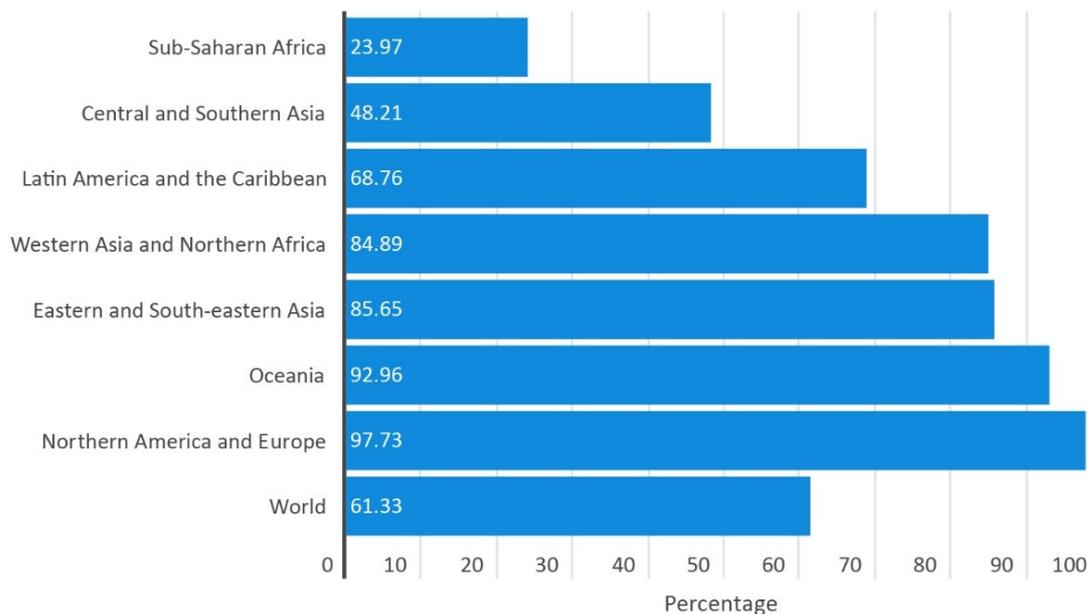


Figure 2. Percentage of upper secondary school with access to Internet (IT technology in learning) (Source: UNESCO Institute for Statistics (Montoya, 2020))

As nations require financial assistance, governments must bridge the “digital divide” by investing in learners, which would result in improved measures of access to and usage of digital technology in schools. Internet might be one of the potential disadvantages for some countries. According to a recent UNESCO study on the availability of power, computers, and the internet in schools for pedagogical reasons, certain regions are falling behind to support learners in technology. There is insufficient data with access to internet at lower education levels in Sub-Saharan Africa, Central and Southern Asia, however; the highest percentage of data access is seen in the North America and Europe, Oceania followed by Eastern and South Eastern Asia (Montoya, 2020).

As part of policy for creating authentic assessments, researchers have reported that higher education spends too much time instilling and testing cognitive abilities that are relatively easy to learn—remembering, understanding, and applying pertaining to lower order thinking skills, but rather focus on more crucial skills of analyzing, evaluating, and producing as part of Higher order thinking skills (Lombardi, 2007).

3.8 Bloom and 21st Century Curriculum

According to UNESCO, the curriculum framework design for today’s education should meet certain needs, such as the need to produce ‘competent’ young people, rather than students who can simply remember information and recall it for examination purposes, ensuring that graduates from their schools have a base of knowledge, skills, attitudes, beliefs, and values that will enable them to function succinctly (IBE-UNESCO, n.d.). Because each country has its own unique educational traditions, curriculum development processes, policy agendas, and budgetary resources. Similarly, each country’s curriculum, which is founded on a national approach to and philosophy of education, has its own unique strengths and shortcomings. Students can fulfill the same set of requirements to participate in the learning environment successfully and school to build or transition to 21st century abilities such as critical thinking, problem solving, and collaboration to meet the countries need and accomplish authentic learning in the 21st century. Students will be provided with the required information and life skills in this manner that will assist them in achieving success in their future jobs (Alismail & McGuire, 2015).

Bloom’s Taxonomy, a framework for creating educational goals devised by Benjamin Bloom and associates Max Englehart, Edward Furst, Walter Hill, and David Krathwohl in 1956, has been utilized by generations of educators from K-12 teachers to higher education instructors. In 2001, Anderson and Krathwohl developed a revised Bloom’s taxonomy that employs verbs to determine groupings and subcategories (rather than the nouns of the original taxonomy). The cognitive mechanisms by which intellectuals encounter and engage with knowledge are explained by these “action verbs” (Armstrong, 2010).

To make learning persist and be meaningful, students need more real-world problem solving, internships or

apprenticeships in real-world situations, and other more genuine learning experiences which increases chances to set secure future career in the 21st century learning skills. In 2008, Andrew Churches moved a step further and combined Bloom's technique with technology to assist educators in assisting learning through the use of digital tools linked to each level of Bloom's paradigm as part of a 21st Century skill to enable higher order thinking and learning (Churches, 2008).

The fact that Bloom's taxonomy may be used to any (cognitive) content with 21st century skills is designed to teach pupils higher-order thinking skills (HOTS), which distinguish critical thinking abilities from lower-order thinking skills (LOTS), such as rote remembering (Watson, 2019). Memorization might allow a quick recall for a short term but hinders a great deal to develop the cognitive process as the students' higher order skills never develops because they can't process the information for evaluation or analysis, affecting their future personal and professional growth (Edureach101). Bloom's Spiraling can be used to frame a lesson, assessment, or even a project-based learning unit by employing the 6 tiers from Bloom's updated model and applying digital technology integration to "Remembering," "Understanding," "Applying," "Analyzing," "Evaluating," and "Creating" in designing the new curriculum. Spiraling is the process of starting at the lowest levels of Bloom's hierarchy—recalling, defining, explaining, and so on—and gradually increasing the degree of thought to form a type of learning route (TeachThought staff, 2021). Trilling and Fadel, in their book "21st Century skills: Learning for life in our Times", speaks about Blooms taxonomy that to maximize the efficacy and duration of learning results, rich, well-designed learning activities and projects as part of well-defined 21st century curriculum which includes creating, applying, remembering, analyzing, comprehending, and evaluating improves the learning outcomes. In connection to setting up the curriculum, the key competencies that separate students who are prepared for more complicated life and work contexts in the twenty-first century from those who are not to boost learning outcomes and innovation abilities as the students must be prepared for the future by focusing on the 4C's of 21st Century Learning: Critical Thinking, Communication, Collaboration, and Creativity and Innovation (Trilling & Fadel, 2009).

Every topic, at every grade level, must involve a commitment to a knowledge core, high thinking demands, and active application of information. In order to develop a 21st-century curriculum, educational systems must provide students with hands-on learning that reflects real-world problems and work opportunities in an interdisciplinary manner, such as working on a physics project to better understand the solar system and applying mathematical calculations to determine which planets are farther apart.

Every topic should incorporate 21st-century abilities. The application of dual-language; local language and foreign language, in the learning processes of all disciplines can help to develop oral communication abilities. It helps students to practice public speaking, build networks, write, and think critically covering the multiple literacy skills. When students are able to communicate, interact, and think critically in order to solve an issue with creativity connected to their knowledge subject, they acquire confidence and self-esteem, and they are more successful in college, at job, and as members of society.

As a suggested idea for 21st century ICT lesson plan in figure 3 shows a design which integrates the thinking skills, and the incorporation of multiple literacies to understand and present the individual or group by critically analyzing the content by the use of spiral approach of Lower order thinking skills to higher order thinking skills as also in connection to authentic assessments, multiple intelligence is tackled through the VARK model approach, collaboration factor is visible with the help of group and hands on activities integrated with blended learning technology integration.

Topic	Learning objectives	Main teaching and learning activities	Time 1.5 hours	Blended Learning VARK Group/ Individual Assessment (Formative/Summative)	Resources	Success Criteria M: Most Students S: Some students F: Few students	
Implementation of Hardware and software in Education	<ul style="list-style-type: none"> -To understand CCTV cameras and video capturing software. -To identify, explain using BLT method, the ethical issues between the stakeholders (T-S-A-P) -To analyse, evaluate the misuse of the technology. 	<p>STARTER: Scaffolding DEBATE session for and Against usage of CCTV cameras in classroom (Student centered: homework research recap.)</p> <p>MAIN: STATIONS and Activities: (Formative)</p> <ul style="list-style-type: none"> -Designing poster using Ms. Publisher, effectiveness of CCTV cameras in School for Teachers and Administrators -Designing a video using Video maker and phones for video recording, Reasoning on the issues of using CCTV Cameras. -Teacher/Individual station: To research as individual activities and complete worksheets provided. (Summative) <p>RECAP-Summarise Lesson: --</p> <ul style="list-style-type: none"> -To Summarise as student centred to recap the lesson. <p>HOMEWORK: --</p> <ul style="list-style-type: none"> -Reading and researching assignment for next lesson Discussion <p>ADVANCED LESSON: Extra Student Activities for advanced lessons</p>	<p>15mins</p> <p>20mins</p> <p>20mins</p> <p>20mins</p> <p>10mins</p>	<p>Debate</p> <p>Station Rotation</p> <p>Lab Rot</p> <p>Video Station</p> <p>Individual-Flex station</p> <p>FLIPPED Model</p> <p>A LA CARTE</p>	<p>G F</p> <p>V G F</p> <p>A</p> <p>R I S</p> <p>K I</p> <p>I</p> <p>I/G F</p>	<p>You tube, Worksheets, Whiteboards Textbooks, Ms. Word Ms. Publisher Video maker Article searches</p>	<p>M: would be able to understand the concept of deploying cameras and be able to distinguish between the software.</p> <p>S: would be able to use reasoning (BLT) method as to how the ethical issues concerning the technology would serve as an advantage or disadvantage.</p> <p>F: would be able to use their critical thinking skill, to evaluate future progress or development of handling the technology.</p>
Differentiation	LA MA-HA	To provide one to one during Teacher-Individual station to guide them. Assign any in completed task as Homework. Keeping a track of their progress and help them when needed. Provide Extra challenging worksheets during individual station. Bonus awarded to help out the assigned LA students					
Teacher's notes	Reflection	To check up on student -----/ Call parents...../ Carry forward any missing activity or plan.					

Figure 3. 21st century lesson plan—a proposed idea (Source: Researcher’s plan)

4. Conclusion

The benefits of establishing a new curriculum that incorporates 21st-century skills outweigh the downsides. Where a lack of information is perceived as a problem among students and educators, educators may be taught through adequate training provided by institutions, culminating in the students’ future growth when they enter the practical and professional world to bring wealth to their nation. We prefer to search for an education system that would educate future workforce since traditional curriculum is much more standard based (McMahon,n.d) and lacks excitement as one-size-fits-all method is used (Driscoll,2021). Because these components of excellent education are more prevalent in affluent institutions, improving and upgrading the quality to 21st-century skills for impoverished nations may appear to be a challenge owing to money, time, and human resources (Gourdard et al,2020), until outside assistance is supplied.

It is empirical that students who are digital natives, who have spent their entire lives in a technological environment surrounded by computers, the Internet, social networks, and so on, are more interested in learning using new innovative ideas in education technology as part of their 21st century collaboration skill (Stauffer, 2020), would like to get introduced to new methods of understanding the 21st century skills in order to be prepared for the professional challenging environment, however not all developing countries get assisted with technology (GAC,2017) as the cost of handling and maintenance might not be affordable with under developed countries.

Overall, 21st century skills will help the young mind in reflecting the information and skills that they will need to succeed in college and in their jobs, as well as to be competitive in the global economy (Alismail & McGuire, 2015). The relevance of applying 21st century curriculum and teaching in schools has been debated by current researchers in order to prepare students who are capable of dealing with complex difficulties and critically examining them. Future skills for the 21st century must be emphasized in order to develop engaged citizens who are able to tackle the difficulties of a global society, be inventive in solving complex issues, and use technology to transform the world for a better tomorrow (Trilling & Fadel, 2009).

5. Recommendation

Educators must consider present methods and regulations, as well as approaches to alter education to meet a wide range of issues in an increasingly complicated society. It is difficult to rely on traditional education approaches to educate students for their future, therefore rethinking education a continuous element of our development process, we open the door to new methods of designing and delivering high-quality teaching and learning.

Future researchers could look at the consequences for instructors in terms of how to properly integrate 21st century skills and multimedia technologies into school courses. Future study should also look at the impacts of employing

21st-century curriculum and instruction on students' cognitive, intellectual, and social skills, as well as quantifying these effects across grade levels and subject areas (Alismail & McGuire, 2015). As Digital Bloom's Taxonomy is a classification system that caters to various requirements while also taking critical thinking abilities into account, professional development in curriculum implementation may be set further as this study could be added in educators graduation curriculum course (Wedlock & Growe, 2017).

The government educational policies and curriculum is updated on regular basis, which makes it difficult for the educators to keep up with the industry's trends and best practices (QU, 2020). The curriculum researchers might work with a variety of government and commercial organizations to execute the training in delivering the 21st-century curriculum. Although not every country and students are privileged with the quality of education, under developed and under developing countries need support. UNESCO and Governments from developed countries can aid and support them such as the Canadian government's support in this field focuses on labor-market-driven vocational training, such as reading and numeracy, particularly for people who have not had a basic education. International scholarships are also funded by Canada with the goal of eliminating poverty in underdeveloped nations (GAC, 2017).

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