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EQUIPPING HIGHER EDUCATION STUDENTS WITH THE 21ST CENTURY SKILLS BEYOND COMPUTER AND TECHNOLOGICAL SKILLS FOR FUTURE EFFECTIVE PARTICIPATION IN THE GLOBAL ECONOMY

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Abstract:
Equipping Higher Education students with 21st century skills for future effective participation in the global economy is a call for proper attention on the skills needed by our 21st century students to effectively participate in the future and its global economy. The skills they learn should reflect the specific demands that is placed upon them in a complex, competitive, knowledge-based, information-age, technology-driven economy and society. This paper, therefore, discussed the learning skills of critical thinking, creative thinking, collaboration and communication. It stated by explaining the meaning of skill. It then discussed the 21st century skill, defined Computer and Technological skills and the Global economy as well as discussed, the importance of the 21st century skills. The paper ex-rayed how students can be equipped with the 21st century skills and the arguments for and against its teaching. The paper went on to make five useful suggestions for addressing the teaching of the 21st century skill. Finally, it concludes with a call for the inclusion of the 21st century learning skills in the curriculum of the higher educational institutions to improve the manpower preparation beyond Computer and Technological skills for future effective participation in the Global economy.

Keywords: skills, 21st century skills, computer and technology skills, global economy

1. Introduction

Generally speaking, the concept, 21st century skills is motivated by the belief that teaching students the most relevant, useful, in-demand, and universally applicable skills should be prioritized in today's schools, and by the related belief that many schools may not sufficiently prioritize such skills or effectively teach them to students. Ross (2016) stated

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that there is need to equip students with improved 21st century skills in order to be adequately prepared to successfully participate in future global economy. The basic idea canvassed in this paper is that students, who are now of age in the 21st century, should be taught different skills than those learnt by students in the 20th century and that the skills they learn should reflect the specific demands that is placed upon them in a complex, competitive, knowledge-based, information-age, technology-driven economy and society. While 21st century skills are relevant in all areas of schooling and academic study and the skills may be taught in a wide variety of in-school and outside-of-school settings, 21st century skills also has a connection with efforts to improve schools.

The 21st century is not in the future-it is today. In this digitally interconnected world, all learners, from cradle to career, need new skills and knowledge to succeed. The toughest challenge employers are facing currently, is where to locate 'the right' employees. In many airports today, self-service passport control machines have replaced hundreds of personnel that formerly handled that activity and so have no need for human workforce. Therefore, in the nearest future, if our students do not have the talent, skill or knowledge of comparable standards to these artificially-intelligent machines providing high-quality services, they will be left behind. Far behind! Their prospects of breaking the shackles of poverty and joblessness will get thinner.

Teachers need to assist students invest in themselves by learning to hone relevant skills such as Write more clearly, Read more, Communicate better, Think critically and be creative while applying good interpersonal relationship. Students need to be taught to reallocate the money they spend on expensive weaves and phones to more sustainable spending that will prepare them for the future. That added value they bring can make them stand out from the crowd. It is important to note that as teachers, we do not have a moment to lose in preparing our students and our nation to compete and to succeed. If we want to prepare our children for success in school, work and life, opportunities to teach and learn 21st century skills are essential.

Skill is an ability and capacity acquired through deliberate, systematic and sustained effort to smoothly and adaptively carry out complex activities or job functions involving ideas, things and /or people. Skills are things you learn which help you to do certain tasks. They are the expertise or talent needed in order to learn, do a job or task. There are basically three types of skills' Learning Skills (Critical Thinking, Creative Thinking, Collaborating and Communicating); Literacy Skills (Information Literacy, Media Literacy, Technology Literacy); Life Skills (Flexibility, Initiative, Social Skills, Productivity and Leadership) (Zook, 2018). Job skills allow you to do a particular job and life skills help you through everyday tasks. These skills have always been important for students, though they are particularly important in our information-based economy. When most workers hold jobs in industry, the key skills are knowing a trade, following directions, getting along with others, working hard, and being professional - efficient, prompt, honest, and fair. Schools may have done an excellent job of teaching these skills, but students still need them. However, to hold information-age jobs, students also need to think deeply about issues, solve problems creatively, work in teams, communicate

clearly in many media, learn ever-changing technologies, and deal with a flood of information. The rapid changes in our world require students to be flexible, to take the initiative and lead when necessary, and to produce something new and useful.

There is distinction between "knowledge" and "skills," but schools and teachers may interpret or misinterpret the two concepts. It is important to note that it's not possible to teach skills separately from knowledge and conceptual understanding. For example, students can't learn to write well if they do not have ideas, facts, principles, and philosophies to write about. They need the knowledge before applying skills. However, "skill" is an artificial concept that cannot be separated from subject-area knowledge and instruction. Many educators argue that skills have historically been ignored or under-prioritized in schools, as new skills are needed for new jobs and the push to give more emphasis and attention to these skills is simply a commonsense response to a changing world, hence, the need for the 21st century skills.

The 21st century skills are more important to students now than ever before not only to provide a framework for successful learning in the classroom, but to ensure students can thrive in a world where change is constant and learning never stops. These 21st century skills are important for the well-being of our country; our business community demands a workforce with these skills to ensure our competitiveness in a global economy. For all learners to acquire the knowledge and skills they need to succeed these 4Cs will be essential- communication, collaboration, critical thinking and creativity. These are skills that all learners need for success in school, work and life. While 21st Century skills have always been important, they've become essential in a worldwide market that moves faster by the day. (Zook, 2018).

2. 21st Century Skills

The Great School Partnership (2016), in their Glossary of Education Reform, stated that the term "21st century skills" refers to a broad set of knowledge, skills, work habits, and character traits that are believed, by educators, school reformers, college professors, employers, and others, to be critically important to success in today's world, particularly in collegiate programs and contemporary careers and workplaces. Generally speaking, 21st century skills can be applied in all academic subject areas, and in all educational, career, and civic settings throughout a student's life.

They noted that the "21st century skills" concept encompasses a wide-ranging and amorphous body of knowledge and skills that is not easy to define and that has not been officially codified or categorized. While the term is widely used in education, its definition is not always consistent, which can lead to confusion and divergent interpretations. In addition, a number of related terms, including applied skills, cross-curricular skills, cross-disciplinary skills, interdisciplinary skills, transferable skills, transversal skills, non-cognitive skills, and soft skills, among others, are also widely used to refer to the general forms of knowledge and skills commonly associated with 21st century skills. While these different terms may not be strictly synonymous, and may

have divergent or specialized meanings in certain technical contexts, they are being addressed as same in the context of this paper for the purposes of practicality and usefulness.

Furthermore, although the specific skills deemed to be "21st century skills" may be defined, categorized, and determined differently from person to person, place to place, or school to school, the term does reflect a general consensus. The following list provides a brief illustrative overview of the knowledge, skills, work habits, and character traits commonly associated with 21st century skills:

- Critical thinking, problem solving, reasoning, analysis, interpretation, synthesizing information;
- Research skills and practices, interrogative questioning;
- Creativity, artistry, curiosity, imagination, innovation, personal expression;
- Perseverance, self-direction, planning, self-discipline, adaptability, initiative;
- Oral and written communication, public speaking and presenting, listening;
- Leadership, teamwork, collaboration, cooperation, facility in using virtual workspaces;
- Information and communication technology (ICT) literacy, media and internet literacy, data interpretation and analysis, computer programming;
- Civic, ethical, and social-justice literacy;
- Economic and financial literacy, entrepreneurialism;
- Global awareness, multicultural literacy, humanitarianism;
- Scientific literacy and reasoning, the scientific method;
- Environmental and conservation literacy, ecosystems understanding;
- Health and wellness literacy, including nutrition, diet, exercise, and public health and safety.

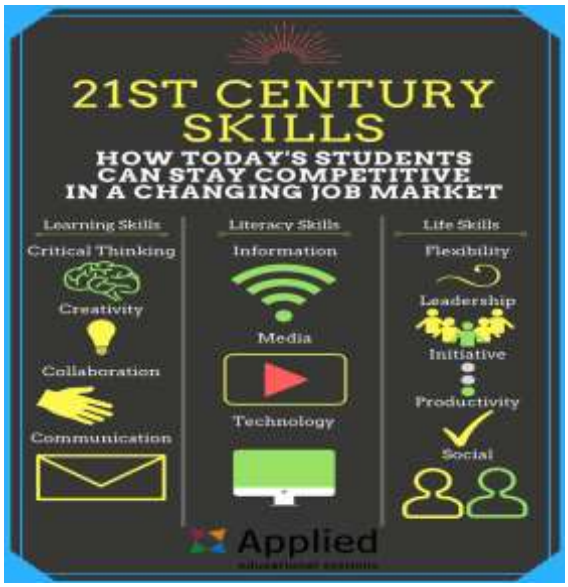

Figure 1: Adopted from Info graphic list of 21st Century Skills by Zook, C. (2018)

2.1 Learning Skills for Future Effective Participation in the Global Economy

Out of the three basic types of 21st Century skills, Learning skills, Literacy skills and Life skills, (Zook, 2018), as shown in figure 1 above, Learning Skills (Critical Thinking, Creative Thinking, Collaborating and Communicating); Literacy Skills (Information Literacy, Media Literacy, Technology Literacy); Life Skills (Flexibility, Initiative, Social Skills, Productivity and Leadership), the Learning skills constitute the 21st century skills addressed in this paper. This is because according to Fadel (2008) "*the internet is changing the way we Work, Live, Play, and Learn*". Hence, the 21st century learning skills are often called the 4 C's, namely, critical thinking, creative thinking, communicating, and collaborating. These skills help students to learn, and so they are vital to success in school and beyond.

2.2 Critical Thinking

Critical thinking simply means, finding solutions to problems. It is a focused, careful analysis of something to better understand it. When people speak of "left brain" activity, they are usually referring to critical thinking. Here are some of the main critical-thinking abilities:

- **Analyzing** is breaking something down into its parts, examining each part, and noting how the parts fit together.
- **Arguing** is using a series of statements connected logically together, backed by evidence, to reach a conclusion.
- **Classifying** is identifying the types or groups of something, showing how each category is distinct from the others.
- **Comparing and contrasting** is pointing out the similarities and differences between two or more subjects.
- **Defining** is explaining the meaning of a term using denotation, connotation, example, etymology, synonyms, and antonyms.
- **Describing** is explaining the traits of something, such as size, shape, weight, color, use, origin, value, condition, location, and so on.
- **Evaluating** is deciding on the worth of something by comparing it against an accepted standard of value.
- **Explaining** is telling what something is or how it works so that others can understand it.
- **Problem solving** is analyzing the causes and effects of a problem and finding a way to stop the causes or the effects.
- **Tracking cause and effect** is determining why something is happening and what results from it.

2.3 Creative Thinking

Creative thinking has to do with thinking outside the box. It is expansive, open-ended invention and discovery of possibilities. When people speak of "right brain" activity, they

most often mean creative thinking. Here are some of the more common creative thinking abilities:

- **Brainstorming** ideas involves asking a question and rapidly listing all answers, even those that are far-fetched, impractical, or impossible.
- **Creating** something requires forming it by combining materials, perhaps according to a plan or perhaps based on the impulse of the moment.
- **Designing** something means finding the conjunction between form and function and shaping materials for a specific purpose.
- **Entertaining** others involves telling stories, making jokes, singing songs, playing games, acting out parts, and making conversation.
- **Imagining** ideas involves reaching into the unknown and impossible, perhaps idly or with great focus, as Einstein did with his thought experiments.
- **Improvising** a solution involves using something in a novel way to solve a problem.
- **Innovating** is creating something that hasn't existed before, whether an object, a procedure, or an idea.
- **Overturning** something means flipping it to get a new perspective, perhaps by redefining givens, reversing cause and effect, or looking at something in a brand-new way.
- **Problem solving** requires using many of the creative abilities listed here to figure out possible solutions and putting one or more of them into action.
- **Questioning** actively reaches into what is unknown to make it known, seeking information or a new way to do something.

2.4 Communicating

Communicating has to do with talking to others and is crucial for students to learn and makes them a valuable part of their team, department and future work place. Without understanding proper communication, students in the 21st Century will lack a pivotal skill to progress their careers.

- **Analyzing the situation** means thinking about the subject, purpose, sender, receiver, medium, and context of a message.
- **Choosing a medium** involves deciding the most appropriate way to deliver a message, ranging from a face-to-face chat to a 400-page report.
- **Evaluating messages** means deciding whether they are correct, complete, reliable, authoritative, and up-to-date.
- **Following conventions** means communicating using the expected norms for the medium chosen.
- **Listening actively** requires carefully paying attention, taking notes, asking questions, and otherwise engaging in the ideas being communicated.
- **Reading** is decoding written words and images in order to understand what their originator is trying to communicate.

- **Speaking** involves using spoken words, tone of voice, body language, gestures, facial expressions, and visual aids in order to convey ideas.
- **Turn taking** means effectively switching from receiving ideas to providing ideas, back and forth between those in the communication situation.
- **Using technology** requires understanding the abilities and limitations of any technological communication, from phone calls to e-mails to instant messages.
- **Writing** involves encoding messages into words, sentences, and paragraphs for the purpose of communicating to a person who is removed by distance, time, or both.

2.5 Collaborating

Collaborating means getting students to work together to achieve compromises and get the best possible results from solving a problem together. It may be the most difficult concept of the four C's but once it is mastered, it is rewarding. The key element of collaboration is willingness. All participants have to be willing to sacrifice parts of their own ideas and adopt others to get results for the group. It means understanding the idea of "greater good" rather than "individual good". It involves engaging in the following activities:

- **Allocating resources** and responsibilities ensures that all members of a team can work optimally.
- **Brainstorming** ideas in a group involves rapidly suggesting and writing down ideas without pausing to critique them.
- **Decision-making** requires sorting through the many options provided to the group and arriving at a single option to move forward.
- **Delegating** means assigning duties to members of the group and expecting them to fulfill their parts of the task.
- **Evaluating** the products, processes, and members of the group provides a clear sense of what is working well and what improvements could be made.
- **Goal setting** requires the group to analyze the situation, decide what outcome is desired, and clearly state an achievable objective.
- **Leading** a group means creating an environment in which all members can contribute according to their abilities.
- **Managing time** involves matching up a list of tasks to a schedule and tracking the progress toward goals.
- **Resolving conflicts** occurs from using one of the following strategies: asserting, cooperating, compromising, competing, or deferring.
- **Team building** means cooperatively working over time to achieve a common goal.

These four C's are only the beginning because as 21st Century skills they require students to understand the information that is around them for a sustainable future.

2.6 Computer and Technological Skills

Computer Technology skills can be defined as the ability to learn, communicate effectively, collaborate, and problem solve about computer technology-related tasks and projects. It is also the ability to use technology to support your work with people, things, data, information, such as using technology to develop print and online materials and using technology to organize and present information or to create and maintain data bases. Computer technology skill is also the ability to support others in the use of technology, such as setting up computer workstations or AV equipment for people, teaching computer skills, trouble-shooting technology-related issues and maintaining and repairing computers and equipment. Turner (2005) noted that during the past 15 years, we in education have moved at light speed in the area of educational technology. Whether one is involved in higher education, secondary education, elementary education or special education, all of us find it difficult to catch up, keep up, and put up with fast-moving computer-based technology. Not since the introduction of the blackboard have we seen a piece of equipment make such a difference in how we teach.

The expert further observed that today, not only do we use computers, but we also have laptops, wireless laptops and tablet PCs. In addition, we have the World Wide Web, scanners, CD burners, USB drives, digital cameras and digital video cameras, PDAs, as well as Video and DVD players. The author notes that most educators use a variety of tools, including video, email, desktop, conferencing, online programs such as WebCT and Blackboard, as well as video conferencing-to teach. Although it is unacceptable for educators in the classroom to be technology illiterates, the 21st century skills have the advantage of using technology more effectively and efficiently for improved learning to participate in future global economy. It is no longer just the ability to use computer and technology but the ability to apply the 21st century learning skills as we use them to effectively participate in the Global Economy.

2.7 Global Economy

Global economy is the economy of the world considered as the international exchange of goods and services that is expressed in monetary units of account (Wikipedia). It can also be defined as the worldwide economic activity between various countries that are considered intertwined and thus can affect other countries negatively or positively (Business Dictionary). Furthermore, Koren (2018) states that the term "global economy" is used to refer to the idea that the economies of almost all the countries in the world are dependent on one another to some extent. In other words, instead of having separate economies for each country or region, we have one economy for the whole world because so many countries trade with one another. This one economy is referred to as the global economy. Hence any changes in the global economy affects us and we affect the global economy, as everything in the world is interconnected when it comes to finance. The relevant question is; "Do employees actually want people with 21st century skills?" The answer is, yes. This is because, to hold information-age jobs students also need to think deeply about issues, solve problems creatively, work in teams, communicate clearly in

many media, learn ever-changing technologies, and deal with a flood of information. The rapid changes in our world require students to be flexible, to take the initiative and lead when necessary, and to produce something new and useful.

2.8 Why are 21ST Century Skills so important?

The need to teach 21st century skills will be addressed from the two perspectives; demand in the workplace and the needs of the learner. From the work place perspective, the following report, which may not be different with other corporate bodies, can serve as examples: The employment titan **Manpower** reports that despite the recession, 31 percent of employers throughout the world struggle to find qualified workers because of "*a talent mismatch between workers' qualifications and the specific skill sets and combinations of skills employers want*." The **American Management Corporation** reports that employers want workers who can think critically, solve problems creatively, innovate, collaborate, and communicate. The **National Association of Manufacturers** reports, "*Today's skill shortages are extremely broad and deep, cutting across industry sectors and impacting more than 80 percent of companies surveyed. This human capital performance gap threatens our nation's ability to compete and is emerging as our nation's most critical business issue*." The **National Academies** indicate that "*The danger exists that Americans may not know enough about science, technology, or mathematics to contribute significantly to, or fully benefit from, the knowledge-based economy that is already taking shape around us.*" The **New York Times** reports that low-skilled workers are being laid off and "*turned away at the factory door and increasingly becoming the long-term unemployed...*" This issue results from a disparity between the skills that workers have and those that employers need (Fidel, 2008).

From the learner's perspective, there is no doubt that the modern learner is a complex energetic and tech-savvy individual. They want to be challenged and inspired in their learning. They want to collaborate and work with peers. They want to incorporate the technology they love into their classroom experiences as much as they can. In short, they have just a high set of expectations of their educators as their educators have of them (Crockett, 2016).

Students need the ability to solve complex problems in real time. As society advances, so will complexity of its manageable conflicts. The focus of teachers should be more on students' ability to devise effective solutions to real world problems. This is what solution fluency is all about. It means solving complex problems effectively in real time using unique and carefully designed solutions.

Students need to inculcate and develop the ability to think and work creatively in both digital and non-digital environments to develop unique and useful solutions. This is important because a creative student is in constant state of stimulation and neutral development with technology use. They are natural producers and consumers or prosumers of information. Problem-solving is a skill that comes naturally to them and this can be advanced profoundly with proper engagement in their learning. This comes from doing rewarding projects and meaningful tasks that give them challenges to overcome in imaginative ways. Ask any student about what they will like to create and

you'll get myriad of different answers. They are constantly searching for ways to express themselves and their uniqueness (Crockett, 2011).

Students need the ability to think analytically, which includes proficiency with comparing, contrasting, evaluating, synthesizing and applying without supervision or instruction. It is important because it means being able to use higher end of Bloom's Digital Taxonomy of Higher Order Thinking Skills (HOTS). Tasks that require linear thinking and routine cognitive work are being outsourced more and more. Analytic thinkers see data and information in different dimensions and from multiple angles. This type of skill is invaluable because they allow students to deal practically with problems of a social, mathematical and a scientific nature. It empowers them to make effective and level headed decisions in their lives and relationships.

Further, students need to possess the ability to collaborate seamlessly in both physical and virtual spaces, with real and virtual partners globally. It is important because it helps them to be attached to their learning. Connection and collaboration with one another are essential to their learning not only to one another but to their mental and emotional health. It is a skill that educators must exercise with them regularly, and understanding collaboration fluency will assist with this.

Students must be able to communicate not just in text or speech but in multiple multimedia formats. Since communication comprises of a multifaceted levels of interaction and sharing information. This will help them communicate using technology. We must remind our students that responsible communication practice puts forth their best representation of whom they are as individuals in every relationship and alliance they make in their lives.

Students require adaptability, fiscal responsibility, personal accountability, environmental awareness, empathy, tolerance and global awareness by students. These are important because a well-rounded and responsible global student practices personal, global, and online responsibility geared towards creating a better world for everyone.

These skills are intended to help students keep up with the lightning-pace of today's modern markets. Each skill is unique in how it helps students, but they all have one quality in common. They are essential in the age of the internet (Zook, 2018).

2.9 Equipping Students with 21st Century Skills

Equipping a child for the world that does not yet exist is not easy task for any teacher, considering the abilities and traits that will serve the students in a time that's changing and developing so rapidly. The question most people would, therefore, ask is; "How do we equip students with 21st century skills in the classroom"? Although equipping students with the 21st century skills will mostly differ from school to school, from subject to subject and from individual to individual, its framework is in the content, the teaching and the assessment (Care, Kim and Vista, 2017). For instance, to teach a child entrepreneurial or manipulative skills in Nigeria, you will need to have the raw materials and machines to practicalise the art. Most children here learn well and faster by doing what the teacher is practicalising. To teach a child computer, you must have a functional

computer set to demonstrate what you mean other than just verbal teaching by so doing the student gets accustomed to the computer functions and can create designs and ideas with it.

However, if we really want to innovate, the classes should be inspired by video games with cross screen scenarios where the solutions touch on several disciplines and this is a practical example of teaching analytical skills. To teach Ethics, Action and Accountability skills, Government with regulations set minimum class sizes, establish education requirements for classrooms. Local government structures such as school boards are set to oversee schools with voter accountability. School choice is another mechanism aimed to give families some influence over the quality of their schools. When these standards are set the teacher will act with integrity and principles set, and these exemplary behavior will be one of emulation for these beginners and thus the students will grow with it and create a better world in the future.

Teachers may be more intentional about teaching cross-disciplinary skills in subject-area courses. For example, in a science course students might be required to learn research methods that can also be applied in other disciplines; articulate technical scientific concepts in verbal, written, and graphic forms; present lab results to a panel of working scientists; or use sophisticated technologies, software programs, and multimedia applications as an extension of an assigned project. States, accrediting organizations, and schools may require 21st century skills to be taught and assessed in courses. For example, states can adopt learning standards that explicitly describe cross-disciplinary skills, and assessments may be designed or modified to evaluate whether students have acquired and mastered certain skills.

Schools and teachers may use educational approaches that inherently encourage or facilitate the acquisition of cross-disciplinary skills. For example, educational strategies such as authentic learning, demonstrations of learning, or project-based learning tend to be cross-disciplinary in nature, and students, in the process of completing a research project, for example, may have to use a variety of applied skills, multiple technologies, and new ways of analyzing and processing information, while also taking initiative, thinking creatively, planning out the process, and working collaboratively in teams with other students.

Schools may allow students to pursue alternative learning pathways in which students earn academic credit and satisfy graduation requirements by completing an internship, apprenticeship, or volunteer experience, for example. In this case, students might acquire a variety of practical, job-related skills and work habits, while also completing academic coursework and meeting the same learning standards required of students in more traditional academic courses.

However, there are always two sides to any story and the story advocating the teaching of 21st century skills cannot be an exception. Hence, the arguments in support and against the teaching of 21st century skills in schools as discussed below.

3. Arguments in Support of Teaching of 21st Century Skills

In today's world, information and knowledge are increasing at such an astronomical rate that no one can learn everything about every subject, what may appear true today could be proven to be false tomorrow, and the jobs that students will get after they graduate may not yet exist. For this reason, students need to be taught how to process, parse, and use information, and they need adaptable skills they can apply in all areas of life. Just teaching them ideas and facts, without teaching them how to use them in real-life settings, is no longer enough.

Schools need to adapt and develop new ways of teaching and learning that reflect a changing world. The purpose of school should be to prepare students for success after graduation, and therefore schools need to prioritize the knowledge and skills that will be in the greatest demand, such as those skills deemed to be most important by college professors and employers. Only teaching students to perform well in school or on a test are no longer sufficient.

Given the widespread availability of information today, students no longer need teachers to lecture to them on the causes of the Civil War, for example, because that information is readily available—and often in more engaging formats that a typical classroom lecture. For this reason, educators should use in-school time to teach students how to find, interpret, and use information, rather than using most or all of the time to present information.

4. Arguments against the Teaching of 21st Century Skills

Public schools and teachers have always taught, and will continue to teach, cross-disciplinary skills, they just never gave it a label. The debate over "content vs skills" is not new. Educators have been talking about and wrestling with these issues for a century. This makes the term "21st century skills" somewhat misleading and inaccurate.

Focusing too much on cross-disciplinary skills could water-down academic courses, and students may not get "the basics." The more time teachers spend on skill-related instruction, the less time they will have for content-based instruction. And if schools privilege cross-disciplinary skills over content knowledge, students may be denied opportunities because they are insufficiently knowledgeable. Students need a broad knowledge base, which they won't receive if teachers focus too much on skill-related instruction or "learning how to learn."

Cross-disciplinary skills are extremely difficult to assess reliably and consistently. There are no formal tests for 21st century skills, so the public would not know how well schools are doing in teaching these skills.

While there is broad agreement that today's students need, different skills than were perhaps taught to previous generations, and that cross-disciplinary skills such as writing, critical thinking, self-initiative, group collaboration, and technological literacy are essential to success in higher education, modern workplaces, and adult life, there is

still a great deal of debate about 21st century skills, ranging from what skills are most important to how such skills should be taught to their appropriate role in public education. There seem to be no clear consensus on what skills specifically constitute "21st century skills," hence the concept tends to be interpreted and applied in different ways, which includes Learning skills, which constitutes the focus of this paper, Literacy skills and Life's skills.

5. Conclusion

In conclusion, there is a call for placing of greater emphasis on cross-disciplinary skills in public education, which was a response to the perception that most public schools pay insufficient attention to the post-secondary preparation and success of students. In other words, the concept has become a touchstone in a larger debate about what public schools should be teaching and what the purpose of public education should be. For example: Is the purpose of public education to get students to pass a test and earn a high school diploma? Or to prepare students for success in higher education and modern careers? Higher education prepares students to contribute to a nation's middle level manpower for improved economy, hence, the need to teach the 4 Cs of the learning skills.

A related observation centers on the distinction between "knowledge" and "skills," and how schools and teachers may interpret, or misinterpret, the concepts. Some educators argued that it's not possible to teach cross-disciplinary skills separately from knowledge and conceptual understanding—for example, students can't learn to write well if they don't have ideas, facts, principles, and philosophies to write about. The basic idea is that "21st century skills" is an artificial concept that can't be separated out from subject-area knowledge and instruction. Other educators may argue that cross-disciplinary skills have historically been ignored or under-prioritized in schools, and the push to give more emphasis and attention to these skills is simply a commonsense response to a changing world.

The push to prioritize 21st century skills is typically motivated by the belief that all students should be equipped with the knowledge, skills, work habits, and character traits they will need to pursue continued education and challenging careers after graduation, and that a failure to adequately prepare students effectively denies them opportunities, with potentially significant consequences for our economy, democracy, and society with impact on the global economy, hence, the need to teach the Learning skills of the 21st century skills in our higher educational institutions.

5.1 Recommendations

The following recommendations are made to address 21st century skills in higher educational institutions:

1) The 21st century skills should be taught in schools for students' future participation in the global economy.

2) Teachers should be made to apply 21st century skills in all subject areas throughout a student's life for future effective participation in the global economy.
3) Students should be assessed based on demonstration of some 21st century skills they have learnt from their teachers.
4) Higher education curriculum should include 21st century skills as part of the students training for successful participation in future global economy on graduation.
5) Higher educational institutions need to think Globally and Act Locally by enforcing the teaching of the learning skills of the 21st century skills

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