

Education in a World Where There Are Not Enough Jobs

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Abstract: Purpose: The purpose of this article is to reflect on the future of education in the context that there might not be enough jobs in the future. In this sense, it is also a reflection on work and living in the future. **Methodology/Approach:** A literature review was conducted for this study. **Findings:** A future without enough jobs for people is a possible scenario, particularly among the younger generation. Thus the major research question is to find out whether this is a universal scenario. Not much thought has been given to the possibility of educating people to deal with temporary or structural unemployment. The brain of the human is wired to work and to maintain a job. Studies show that when people are unemployed, their health and social conditions deteriorate, among others. As a result, how can we teach people to live a good life? What other policies can be put in place to support unemployed individuals? The Universal basic income (UBI) is not sufficient because employment is more than a means to obtain an income as work is the main interface of the individual with the collectivity. **Originality/value of paper:** The possible reality that a significant part of society might be unemployed in the future, and their need to be educated to cope with this situation is not enough discussed in the academic world. This paper addresses the need to explore this situation further.

Key words: unemployment; education; robots; artificial intelligence; universal basic income; share economy; voluntarism

JEL codes: I210

1. Introduction

Many countries are forced to cope with high percentages of people who have been unemployed for a longer period (Bentolila & Jansen, 2016). Dodgson and Gann's (2016) article entitled "There will be much less work in the future. We need to rethink our societies" forms the research question of this essay. By referring to Uber, this article illustrates, how technology can be disruptive and lead to the disappearance of jobs, and hence unemployment, as supported by the following quote:

- Technological disruption is exacerbating social inequalities, and we need to talk seriously about the virtues of a social wage. We need to fund people to work, without necessarily being employed, in a manner that allows them to help others or practice their skills in ways that they find meaningful and rewarding.
- To this end, education needs to change from readying people for a (probably non-existent) job, to preparing them to create self-defined work.

Embedding coding in the curriculum is great, but it only gets us so far. Education systems need to reject the

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barbarism epitomized by the UK's national school curriculum, which no longer includes the study of art history, classic civilization, or archaeology. Given the UK's cultural influence internationally, such moves are remarkably short-sighted (Dodgson, 2016).

Graeber (2016), in his article "Why Capitalism Creates Pointless Jobs", refers to a prediction by John Keynes made in 1930, stating that, by the end of the 20th century, Great Britain or the United States would achieve a 15-hour working week. He further states that this prediction would be a reality if the idea were not pursued for moral political reasons, such as the political desire to maintain and create jobs. The consequence is that there are a considerable amount of senseless jobs. Graeber makes a distinction between real productive jobs, nonproductive jobs, or senseless jobs and unemployment. In light of this, the problem not only concerns unemployment but also the creation of "senseless" jobs. These claims are also made by other authors including Bergman (2016) and Anthony (2017).

Unemployment and inequality are at the top of ethical issues that societies will face. This is due to technology, robots, or artificial intelligence, or whatever it is labeled (Bossmann, 2016).

Based on the aforementioned statements, it is important to raise the following question: How can we educate (young) people to live without having to work?

If people are not employed, they will still need an income to live. The Universal Basic Income (UBI) is an interesting concept; however, a job is much more than a means of obtaining an income. Ooghe (2016) states that it is not only about employment. The problem is not only or primarily the lack of income; to a greater degree, the problem concerns the possibility to provide for oneself and the loved ones. If that were the case, then "free money" would be the solution (Varoufakis, 2016). Even if there are a wealth of jobs available, the question is how meaningful these jobs actually are. Thus, young people who are eligible for employment are led to ask themselves how significant their jobs really are.

The educational system has become a system that is at the service of the labor market or corporate world, and its primary function is to train people for the labor market. Over the past few years, the educational system is in a state of transition as it begins to teach 21st century skills. One of the questions this article examines is whether the so-called 21st century skills (Rotherham & Willingham, 2010) take this future scenario of structural unemployment into account.

2. What Are the Causes of Unemployment?

The Bank of America has opened three branches with no personnel (Freed, 2017). Moreover, Amazon is using drones to deliver packages (Levin & Soper, 2016) and robots will grow our food (Willige, 2017 a). Studies indicate that the use of robots will dramatically increase productivity (Houser & Javelosa Writer, 2017). Thus, it is necessary to find out how disruptive technology affects employment.

Manufacturing jobs are disappearing, and bringing them back is an illusion (Buttonwood, 2017). Some believe that technology will only affect blue-collar jobs — this is not the case. Artificial intelligence (AI), which refers to the ability of a machine to imitate human intelligence, will also affect the employment of highly skilled professionals. Kaplan (2016) states that although robots will not replace highly-skilled professions, such as psychiatrists or heart surgeons, they will nonetheless alter them significantly. Others claim that lawyers could also lose their jobs to AI (Livni, 2017). Another example of jobs being eliminated by technology concerns the development of payment solutions in the retail industry that replaces the cashier with automated services (Smith,

2016). Furthermore, machine-scanning containers are being used in place of humans (“Machines are learning to find concealed weapons in X-ray scans”, 2016), and in Japan, office workers are being replaced by AI (McCurry, 2017; Gershgorn, 2017).

Thus, it is not only offshore outsourcing to China that will eliminate jobs; disruptive technology could altogether eliminate the need for human jobs (Miller, 2016).

This list below illustrates some of the jobs in the USA that observers claim could be lost mainly as a consequence of technological innovation, but also to global outsourcing:

(12) Computer programmers

(11) Molding, core making, and casting machine setters; machine operators and tenders; metal and plastic workers

(10) Switchboard operators, including answering service

(9) Cutting, punching, and press machine setters, operators, and tenders

(8) Postal service mail sorters, processors, and processing machine operators

(7) Tellers

(6) Sewing machine operators

(5) Farmworkers and laborers in crops, nurseries, and greenhouses

(4) Executive secretaries and executive administrative assistants

(3) Postal service mail carriers

(2) Cooks, fast food

(1) Bookkeeping, accounting, and auditing clerks (Lubin, 2016).

Still, humans have an advantage over robots in some areas that include “spotting new patterns, logical reasoning, creativity, coordination between multiple agents, natural language understanding, identifying social and emotional states, responding to social and emotional states, displaying social and emotional states, and moving around diverse environments” (Lubin, 2017).

As such, the above research shows that the global economy will never be the same again (Martin, 2016), and in light of this, some foresee a future of economic growth with no growth of jobs (Janoski, Luke, & Oliver, 2014). Furthermore, as Ford (2015) argues, accelerating technology will radically and fundamentally “disrupt” global employment and the nature of work. Of course, predictions of a jobless future are not new. However, Ford argues that we are approaching a critical “tipping point”; one that is poised to make the world economy significantly less labor intensive. It is not simply routine jobs that are most threatened by technology; more accurately, it is “predictable” jobs. Computers, argues Ford, are becoming highly proficient at acquiring skills, especially where a large amount of training data is available. “Whether you are training to be an airline pilot, a retail assistant, a lawyer or a pharmacist, labor saving technology is whittling away the numbers ...and in some cases hugely so” (Ford, 2015).

Part of this technological revolution is the Internet of Things or IoT: the interconnection via the internet of computing devices embedded in everyday objects, enabling them to send and receive data¹.

According to a UN report entitled, “Robots Will Replace Two-Thirds of All Workers in the Developing World” by 2045, half of the adult population will be unemployed, because “robots will take over jobs” (Vardi,

¹ <http://www.economist.com/news/business/21711079-american-industrial-giant-sprinting-towards-its-goal-german-firm-taking-more?fsrc=scn/fb/te/bl/ed/machineslearningsiemensandgeneralelectricgearupfortheinternetofthings>.

2013; Hutt, 2016; Caughill & Corpuz, 2016). It is worth underscoring the fact that this report refers to the developing world, though it is difficult to imagine that this will be a universal trend. Other reports state that this trend will not limit itself to the developing countries, but rather it will extend to the developed countries in addition (Caughill & Corpuz, 2016). Some argue that jobs in less developed countries are even more threatened because the tasks are easier to replace, and another argument is that new technology can be implemented without old technology being an obstacle to be dealt with first. To illustrate the last argument, it is much easier to build a new city for the driverless car compared to introducing the driverless car in an existing city. This was also the case with implementing the cellular phone in rural Africa².

Youth unemployment is already a global issue. According to *The Economist*, 290 million people between 15-to-24 years-of-age are without a job (Nassetta, 2016). Moreover,

“The World Economic Forum has estimated that five millions jobs will be lost by 2020. A 2013 Oxford study estimated that 47% of U.S. employment is at risk of being computerized. Economist Lawrence Summers, the former Treasury secretary, expects that more than one in three men in their prime working years will be out of work in 2050” (McFarlan, 2016).

This is not because young people are less talented and have fewer skills. In another article, *The Economist* (2106) utters that the young people of today are gifted and held back because policies focus on other demographic groups, such as the elderly. Unemployment has changed (Smialek & Laya, 2017), and some even speak of the rise of the useless class (Harari, 2017).

In the last decade, policy attention to better developing the knowledge and skills of the workforce has increased for several reasons. First, this is because of global youth unemployment rates, which are three times higher than the unemployment rate for those over 25 years old, have raised concerns about social stability as well as sustained and long-term economic growth. Second, many who argue that youth unemployment is partially caused by a mismatch between graduates' skills and the skills that employers need. They also believe that revitalizing vocational education and training can help address the problem. Third, a skilled workforce that can easily adapt to technological change is likely a fundamental component for countries to remain competitive in the global economy (Roseth & Valerio, 2016).

Others argue that AI will not destroy jobs but will instead create employment. Artificial intelligence talent is high in demand. Students are recruited aggressively by big companies from universities³. Further, some campaigns target specific groups, such as females (Darrow, 2016). This trend has been termed the Fourth Industrial Revolution (Schwab, 2016; Galeon, & Marquart, 2016). Technology will also create new jobs. For example, people will be needed to fly drones, to work as big data analysts, and to fight cybercrime. Personalized preventative health helpers and so on (Myers, 2016; Daugherty, 2017). However, these new jobs will not be sufficient to replace the jobs that will disappear, nor is there the possibility to retrain everybody to acquire the skills to obtain one of these new jobs.

Unemployment has other roots besides AI; for example, cultural reasons (e.g., gender inequality), poor economic conditions, and geopolitical issues (e.g., the refugee crisis, the skills gap). Even in developed countries, one-fifth of students do not acquire enough skills to get a job (Nassetta, 2016). Another factor that contributes to the lack of enough jobs is that people live longer, must work longer, and must be taken care of when necessary.

² <http://learnmore.economist.com/story/583d8d75a368444c133bedcc>.

³ <http://www.economist.com/news/business/21695908-silicon-valley-fights-talent-universities-struggle-hold-their?fsrc=scn/fb/te/pe/ed/milliondollarbabies>.

3. What Are the Consequences of Unemployment?

There are two possible scenarios: One where we get it right and one where we get it wrong. If we get it right, we might get an economic system that includes everybody; however, if we get it wrong, it might be the end of the current economic system (Farrell, 2013).

After many years, a generation will be worse off financially, socially, and have a lower life expectancy than their parents (Luxton, 2016; Quattrucci, 2017). This is a form of relative exclusion of young people. If AI is not an inclusive technology, it will be resisted (Calestous, 2016), because technology not only causes unemployment, it causes isolation and loneliness (Hewko, 5 December, 2016).

The emphasis on technology, technocracy, and the lack of sufficient meaningful jobs creates a climate for populism, thereby putting democracy at risk⁴ (Easterly, 2016). Technology will affect governance. For example, Buckup (2016) suggests that democracy could be replaced by algorithms. “The digital revolution will fundamentally transform political participation; we are only just seeing the beginnings. If these changes will be for the better or worse depends on our commitment to renewing and reaffirming these core principles”.

Susskind and Susskind (2016) state that their research shows that all jobs are threatened by disruptive technology and not only routine work. Further, technology and artificial intelligence will even change the way we manage (Kolbjørnsrud, Amico, & Thomas, 2016), and in addition, it will not only impact employment and how the market functions but it will also impact the governance of society. Google is not a neutral platform but it frames reality (Cadwalladr, 2016). This is referred to as algorithms. Thus, management and governance will be impacted by algorithms.

Becoming unemployed is one of the greatest fears. It is about losing income, a platform of self-actualization, giving meaning and rhythm to life (Quattrucci, 2016). Research shows that unemployment elevations of depression, anxiety, somatization, and self-reported physical illness — these illnesses are reversed by employment (Kessler, Turner, & House, 1988). Moreover, as noted by van der Noordt, IJzelenberg, Droomers, and Proper, “... employment is beneficial for health, particularly for depression and general mental health. There is a need for more research on the effects of employment on specific physical health effects and mortality to fill the knowledge gaps” (2014).

For one, we should be careful about stigmatizing people who are out of work. Instead of observing their unfavorable personality traits and thinking, “This is why they can’t find a job”, Boyce advises people to recognize that their personality could be part of a “negative spiral”. In other words, unemployment leads to personality change, which in turn leads to difficulty finding work. (Lebowitz, 6 Oct., 2016)

4. Universal Basic Income

Some authors believe that Free Money or Universal Basic Income (UBI) could be the solution to the increasing unemployment rates (Bergman, 2016; Galeon, & Marquart, 2016; Gentilini, 2017; Houser & Javelosa Writer, 2017).

A basic income is an income unconditionally granted to all on an individual basis, without a means test or work requirement. It is a form of a minimum income guarantee that differs from those that now exist in various European countries in three important ways:

- it is paid to individuals rather than households;

⁴ <http://www.economist.com/news/business/21712165-1942-joseph-schumpeter-warned-capitalism-might-not-survive-surge-populism-means-it?fsrc=scn/fb/te/bl/ed/schumpeterourschumpetercolumnistpensadarkfarewell>.

- it is paid irrespective of any income from other sources;
- it is paid without requiring the performance of any work or the willingness to accept a job if offered (“What is basic income?”, 2016).

Elon Musk — the mind behind the Tesla corporation, and the SpaceX project, among many other ventures — believes that, in the future, machines will “free” many of the existing jobs and that free money is a must (Peysers, 2016), because there will not be enough jobs to earn an income and unemployment has serious consequences.

The concept of free money is not new; it goes as far back as Thomas More in *Utopia*, which was published in 1516. People like Bill Gates are suggesting to tax robots to generate funds to address the problems (Titcomb, 2017). Gates states that, currently, we are not ready to implement this concept because we have not figured out yet how to pay for this (Bill Gates: *The World Isn’t Ready for Universal Basic Income Now, But We Will be Soon*, 2017). The problem is that income is just a part of the problem (McAfee, 2016).

UBI is an alternative for the belittling welfare system and is expected to fight poverty, reduce policing, and improve health (Galeon, & Marquart, 2016; Santens, 2017). Research shows that contrary to common belief, UBI will not be abused by those receiving it. To the contrary, they are likely to spend it on education and the care of their family, especially their children (Kopf, 2016). Also, people have better judgment when they are beyond the survival mode; they can think long-term, plan, and take better decisions (Santens, 2017).

Experiments based on this concept are already being conducted in Finland and Silicon Valley (Goodman, 2016; Sodha, 2017), in addition to the Dutch municipality of Utrecht and a number of pilot projects in Kenya and India. Ontario in Canada started a pilot in 2017 (Jaczek, 2017), and Scotland will also start a pilot UBI project (Brooks, 2017). Also, UBI will soon be debated in the Dutch parliament (“Open Vld pleit voor debat over het basisinkomen”, 2016), and in Switzerland, the voter voted against UBI in a referendum in June 2016. In a recent poll, 60 percent of Flemish people declared that they were in favor of UBI (“6 op de 10 Vlamingen pro basisinkomen”, 2016)

It may surprise you to learn that a partial UBI has already existed in Alaska since 1982, and that a version of basic income was experimentally tested in the United States in the 1970s. The same is true in Canada, where the town of Dauphin managed to eliminate poverty for five years. Full UBI experiments have been done more recently in places such as Namibia, India, and Brazil, while other countries are following suit—Finland, the Netherlands, and Canada are carrying out government-funded experiments to compare the success of existing programs. Organizations like Y Combinator and Give Directly have launched privately funded experiments in the USA and East Africa respectively (Santens, 2017).

A less dramatic solution to UBI is the shortening of the workday from eight to six hours, as Sweden has done (Alderman, 2016). Another form of shortening the workday is to use part-time work schedules. In the Netherlands, which is considered by some as one of the happiest countries of in the world, more than fifty percent of the people work part-time (Moss, 2017). This brings us back to the prediction by Keynes that, as mentioned before in this article, it is possible to significantly shorten the workday, and the addition support offered by the statement it is a political choice not to make this prediction a reality.

5. What Skills Does a Person Need to Be Unemployed and Live Some Kind of Quality of Life? What Should We Teach or Learn in Schools?

Willige (2017) states that the current educational system is failing our children because they do not have the skills they need to enter the labor market and that the educational system for the future should observe the following principles:

- (1) Focus on the early years.
- (2) Keeping the educational system dynamic.
- (3) Open-sourcing education.
- (4) Taking teachers out of the ivory tower.
- (5) Giving students a sense of the real world of work.
- (6) Addressing the vocational stigma.
- (7) Digital fluency.
- (8) Lifelong learning.

The current debate on education and skills focuses on the issue that the educational system does not deliver graduates with the skills and/or the level that employers are looking for⁵ (Kant, 2017). Many young people are still not schooled (Bokova, 2017), and some believe that the next generation must be prepared for the world of AI:

Prepare the next generation. Re-evaluate the type of knowledge and skills required for the future, and address the need for education and training. AI presents the opportunity to prepare an entirely new sort of skilled and trained workers that do not exist today. This training should be targeted to help those who are disproportionately affected by the coming changes in employment and incomes (Daugherty, 2016).

Others raise the question as to whether a post-graduate degree adds any value (Alptraum, 2016). Apparently, we have arrived at a point where there is a consensus that the main objective of the educational system is to train graduates for the labor market. In an interview, philosopher Martha Nussbaum rightfully states that education is neglecting to educate people to become good citizens. Education overemphasizes training people to become professionals (Nussbaum, 2016). Despite the scenario that there will not be enough jobs in the future, the focus in the debate on education is still on how to develop skills for the job market.

As a result, it is worth examining the countries with the best educational systems used to teach children (Williams-Grut, 2016). The ranking is the following:

1. Finland – 2. South Korea – 3. Hong Kong – 4. Japan – 5. Singapore – 6. UK – 7. Netherlands – 8. New Zealand – 9. Switzerland – 10. Canada – 11. Ireland – 12. Denmark – 13. Australia – 14. Poland – 15. Germany – 16. Belgium – 17. USA – 18. Hungary – 19. Slovakia – 20. Russia (Thifa, 2017).

East Asian countries are way ahead of the pack as far as education is concerned. This seems to come down to the following four factors:

- (1) Culture and mindset. There is a high value placed on education.
- (2) The quality of teachers. Teaching is a respected profession in East Asia.
- (3) Using the evidence. Teaching is a highly respected job in East Asia.
- (4) A collective push (Boylan, 2017; Patrinos, 2017).

There is a growing consensus that the best education is delivered by providing the following content in schools: STEM (science, technology, engineering, and mathematics) and cross-sector skills (public and private companies, non-profits, educators, and legislators) (Kant, 2017).

According to Hutt (2016): “By 2020, more than a third of the core skill set of most occupations will be made up of skills that are not considered crucial to the job today, according to the *Future of Jobs* report.”

With education, we will need to provide tools and incentives for employees to train themselves regularly. Still, no matter how much training is on offer, companies probably won't have all the tools they need. Things are simply changing too fast. As

⁵ <http://knowledge.wharton.upenn.edu/article/college-vs-business-training-what-do-employers-want/>.

a result, freelancers will begin filling those gaps more and more. (Kasriel, 2016)

5.1 21st Century Skills

There is a growing consensus that students should be taught 21st Century Skills.

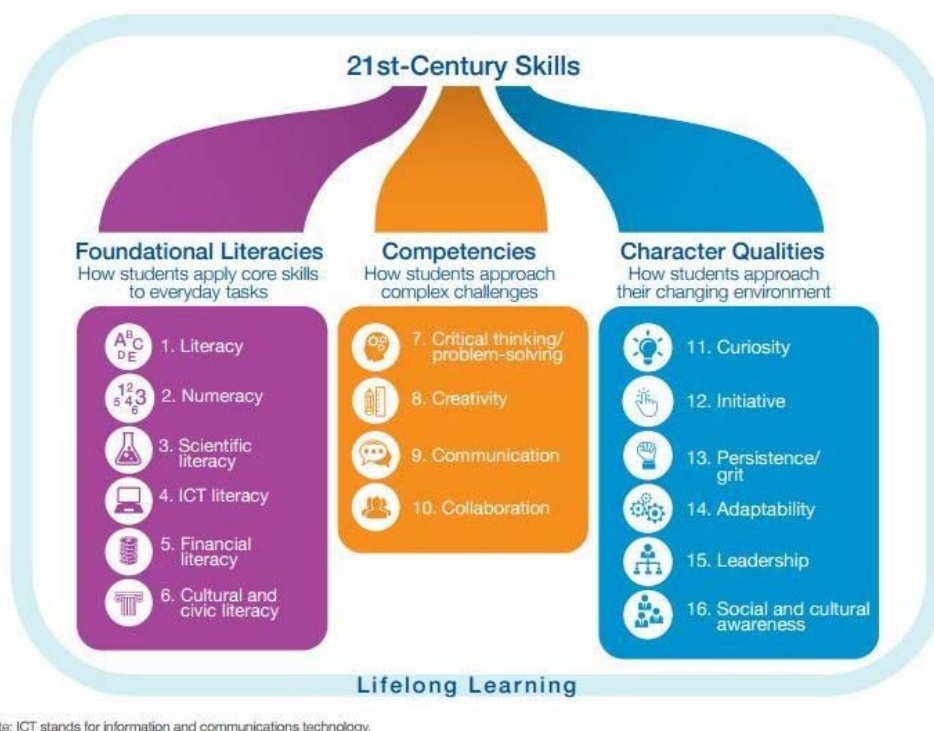


Figure 1 Students Require 16 Skills for the 21st Century

Source: Soffel, 2016; “21st century skills”, 2016.

5.2 Digital Skills

Some state that we need digital skills for the future (Park, 2016). This is skill number 4 of the 21st Century Skills — ICT literacy.

Digital intelligence or “DQ” is the set of social, emotional, and cognitive abilities that enable individuals to face the challenges and adapt to the demands of digital life. These abilities can broadly be broken down into eight interconnected areas:

Digital identity: The ability to create and manage one’s online identity and reputation. This includes having an awareness of one’s online persona and the ability to manage the short-term and long-term impact of one’s online presence.

Digital use: The ability to use digital devices and media, including the mastery of control in order to achieve a healthy balance between life online and offline.

Digital safety: The ability to manage risks online (e.g., cyberbullying, grooming, and radicalization) as well as problematic content (e.g., violence and obscenity), and to avoid and limit these risks.

Digital security: The ability to detect cyber threats (e.g., hacking, scams, malware), to understand best practices, and to use suitable security tools for data protection.

Digital emotional intelligence: The ability to be empathetic and build good relationships with others online.

Digital communication: The ability to communicate and collaborate with others using digital technologies and media.

Digital literacy: The ability to find, evaluate, utilize, share, and create content, as well as competency in computational thinking. These skills are particularly relevant in the present era in which fake news has now become a problem.

Digital rights: The ability to understand and uphold personal and legal rights, including the rights to privacy, intellectual property, freedom of speech, and protection from hate speech.



Figure 2 Digital Skills (Park, 2016)

However, digital skills are no panacea. Some state that allowing children to use the internet at an early age can be dangerous (Guo, 2017).

5.3 Critical Thinking

While the importance of critical thinking is often emphasized (Davies, 2016), the concept of critical thinking is presently not clearly defined. Some authors view it as the ability to ask critical questions and an unwillingness to accept information at face value. Critical thinking is often mistaken as criticism and/or negative feedback. According to Davies (2016), “How, then, to define critical thinking? It is certainly not an easy question to answer, and perhaps, a definition of it is ultimately unimportant. That being said, it is nonetheless important to note that it needs to be taught, and we need to ensure that graduates emerge from university being good at it”. However, I disagree, and instead believe that we need to define the concept. Critical thinking is the ability to continue to ask questions, even if there is an answer.

5.4 Languages

Recently, Hunt (2016) posited that verbal skills are needed to impress employers. While I concur with this statement, I postulate that they are important in all circumstances and not only to impress employers.

When discussing verbal skills, the learning of foreign languages is often neglected. Yet, as Thompson (2016) observed, not only is learning a foreign language healthy for the brain, but it also seems to make a person more tolerant of other cultures. This is particularly relevant in the small and overcrowded world we live in today, in which the global population keeps growing and technology brings people from different backgrounds closer together.

Nevertheless, the above statement does not contradict the fact that there is a correlation between the level at

which a population masters English and its (economic) development. It is unclear which 21st Century skill covers this area.

5.5 Music

Music can be considered a universal “language” through which we can communicate. As such, all humans should master a basic musical knowledge. This form of self-expression is also healthy for the brain. Music stimulates the brain to develop new neural connections. It is unclear which 21st Century skill covers this area.

5.6 Life Skills

These skills, in addition to the following three skills, are considered covered under the “Character Qualities” branch of 21st Century Skills, but this is debatable. Another arguable statement is that other skills cover the area of emotional intelligence, that is, the capability of individuals to recognize both their own and other people’s emotions.

Uppink (2016) emphasizes the importance of other life skills, such as making time for self-care, not rushing, speaking up, being curious, being kind and fair, and not treating suffering as the enemy, among other practices. I would add the life skills of financial literacy and maintaining a healthy diet and regular exercise to this list.

The unemployed must be able to plan their days and have a long term plan. They must be able to socialize and keep relationships. In addition, they must be able to express themselves creatively, individually, and as a group. They must be able to contribute to society.

5.7 Soft Skills

As Nassetta (2016) states, “Schooling and technical skills alone aren’t enough; young people also need ‘soft skills’ like communication, problem-solving, and cross-cultural competencies to be successful” (2016). Moreover, Wells (2016) is of the opinion that soft skills will be of particular importance in the future. On this issue, Torkington (2016) stated:

David Deming, associate professor of education and economics at Harvard University, argues that soft skills like sharing and negotiating will be crucial. He says the modern workplace, where people move between different roles and projects, closely resembles pre-school classrooms, where we learn social skills such as empathy and cooperation.

The study shows that workers who successfully combine mathematical and interpersonal skills in the knowledge-based economies of the future should find many rewarding and lucrative opportunities.

The challenge now, says Deming, is for educators to complement their teaching of technical skills like mathematics and computer science, with a focus on making sure the workers of the future have the soft skills to compete in the new jobs market.

According to Trounson (2016), simple pleasures help people to achieve personal goals. I concur with this view, and further suggest that children be taught in school the importance of deriving pleasure from small everyday events, as this would make their lives more fulfilling.

5.8 Meditation

Others advocate the introduction of meditation sessions or quiet periods, and even spirituality in the classroom.

5.9 Ethics

Children should also be taught right from wrong. This ability has become a big problem. The question is how to teach this?⁶

5.10 Learn to Learn

Lifelong learning is becoming more important than ever because things keep changing more than ever before. There is a constant need to reskill. Flexible working arrangements and teleworking by knowledge workers will

⁶ <http://www.economist.com/node/6999588?fsrc=scn/fb/te/pe/ed/twomomers?fsrc=scn/fb/te/bl/ed/>.

increase in importance (Kasriel, 2016). Singapore is a leader in implementing this strategy of reskilling workers⁷.

While it may seem obvious, people must learn how to learn. This has become even more important recently, owing to the prevalence of online learning platforms. The most remarkable platform comprises the so-called MOOCs — massive open online courses⁸. As new courses and programs are being offered online, many of which are free of charge, to benefit from this resource, users must be self-reliant and able to identify and absorb relevant information (Zapletalova, 2015).

5.11 Conclusion

While the aforementioned skills are certainly relevant, in the future, not being employed in the traditional sense could be the norm. Thus, in order to cope with this highly uncertain reality, people need new skills, even if they receive a basic income. Still, much of the literature focuses on schooling for employment.

6. Solutions

In the future, solutions to retaining the workforce will not only be about employment and vocational training but also about entrepreneurship (John, Benedict, Kanayo, & Ekenechukwu, 2016).

When we look at the future of work with circular, collaborative, and connective lenses, it stops looking like the automation apocalypse. These “three Cs” are not just attributes of an economy that may well yield minimum waste and maximum benefits for a larger number of people; they are qualities of a networked society in which we become individually stronger when we act collectively. They are critical skills that allow us to turn specific problems into systemic possibilities, and shape the future of work we want. They are the demonstration that, in the 21st century, solidarity is not just an ethical quality, but it makes social and economic sense. A robot cannot see and seize that (Quattrucci, 2016).

However, the future will also be about living without employment. In the following paragraph, these issues will be addressed. This is a possible reason why there is a whole lineage of a growing number of authors (e.g., Tony Robbins, Robin Sharma, John Assaraf, Steven Covey, John Maxwell, etc.) in the field of self-help and personal leadership. These writers all focus on finding one’s purpose and using one’s passion to discover how to live life to one’s full potential, thus helping people to reach a stage of self-actualization, which is something that only 5 percent of the world’s population is considered able to do.

The framework developed by The Center for Curriculum Design is a welcome addition the 21st Century Skills Framework. Besides knowledge and skills, this framework adds character and meta-learning. Meta learning is about self-reflection and adaption and the growth mindset. These two elements, character and meta-learning, go beyond preparing people for the labor market and gaining employment in a corporation.

⁷ <http://www.economist.com/news/special-report/21714175-systems-continuous-reskilling-threaten-buttress-inequality-retraining-low-skilled?fsrc=scn/fb/te/bl/ed/theelephantinthetruckretraininglowskilledworkers>.

⁸ <http://www.economist.com/news/special-report/21714173-alternative-providers-education-must-solve-problems-cost-and>.

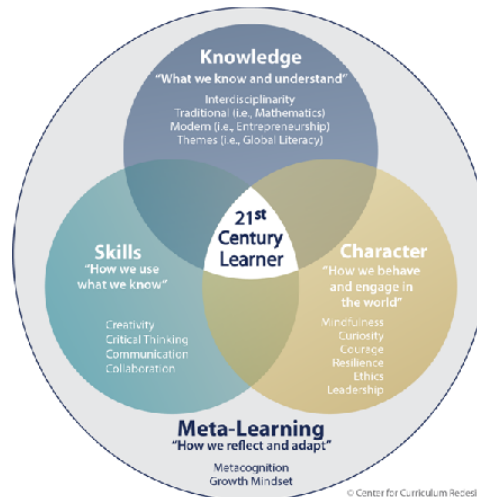


Figure 3 The four dimensions of Knowledge, Skills, Character and Meta-Learning
Uplifting Curacao, 2017.

6.1 The Gig Economy

Mulcahy (2017) states in his article “Why I Tell My MBA Students to Stop Looking for a Job and Join the Gig Economy” that MBA students should join the gig economy as soon as possible. A gig economy is an environment in which temporary positions are common and organizations contract with independent workers for short-term engagements. Corrigan (2016) states that we should look for all sorts of alternatives everywhere to create jobs that include people.

As increasing numbers of people work remotely, maintaining efficiency and productivity requires employers and to be trustworthy and self-directed. In turn, this will increase employee productivity, happiness, and trust (Luxton, 2016).

In a recent article, Goudreau (2015) stated that Google retains talent by providing a friendly and inspiring working environment, as well as opportunities for doing meaningful work. However, this still implies that work will be the norm in the future, but there will be people that will remain unemployed.

6.2 Social Entrepreneurship

Some are exploring a future scenario in which we will all be our own bosses, because being self-employed is the norm (Kasriel, 2016). Perhaps that is why others consider implementing AI via social entrepreneurship, whereby the social dimension is integrated into entrepreneurship. In other words, it will not only be about profit but also about creating jobs and other social values. Furthermore, the onus is solving real social problems by starting an enterprise do solve the issue first hand (Schwab, 2017).

6.3 Eliminate the False Divide

Another part of the solution is to eliminate the false divide between work and home (Deshmukh-Ranadive, 2016). Working at home is work in all its forms. Viewed from this paradigm, being at home is being at work, and vice versa. This elimination of the divide between work and home is enabled by information and communication technology — work comes to the home, and in turn, home comes into the workplace (Colson, 2016).

6.4 Voluntarism

Voluntarism might be an answer to isolation and loneliness of the unemployed by getting them involved in projects and activities on a voluntary basis. “As a result, smart volunteering offers a model of active, long-term friendship that can temper the challenges of the Fourth Industrial Revolution and ensure we are no longer

“bowling alone” (Hewko, 2016).

6.5 The Share Economy in Smart Cities

Those without a job as we know it will meet part of their needs by being part of the share economy. A sharing economy is an exchanging value on a peer-to-peer basis, often on a technology platform (Hall & Pennington, 2016).

The sharing economy is also a form or an element of sustainable development because it reduces the impact on the environment by reusing products and material. All this will transform the city in combination with AI and other technology (Dia, 2016). In the city, entrepreneurs meet and collaborate and inspire each other (Dalzell, 2016). There are some utopic visions of cities where citizens own nothing and have no privacy (Auken, 2016). Rainwater (2017) states that cities could prepare eight ways for the future of work:

- (1) Rethink education and workforce training programs.
- (2) Update policies to reflect the changing composition of the workforce.
- (3) Support entrepreneurs and startups as a core workforce development strategy.
- (4) Build equitable business development programs.
- (5) Invest in digital and physical infrastructure that supports the workforce of tomorrow.
- (6) Ensure access to paid leave for families.
- (7) Consider offering portable benefit systems.
- (8) Explore basic income and other broad-based social support systems.

On the other hand, others identify a trend showing that creative and entrepreneurial young people are operating more and more from outside the city (Duff, 2016).

7. Discussion and Conclusions

At first glance, these 21st century skills do not explicitly address the issue that the person might be unemployed in the future. The question addressed in this article is: What skills does a person need in order to be unemployed and still have some kind of quality of life? To answer this question, we first need to answer other questions: What are the causes of unemployment? What are the consequences of unemployment? The deployment of technology presents us with ethical dilemmas that are often overlooked and should thus be addressed (Dalmia & Sharma, 2017). Here, Livni (2017) presents a relevant case: “A rogue robot is blamed for the gruesome death of a human colleague.”

As no one can predict the future, what is presented in this paper are merely a number of possibilities presented by an assortment of experts. A few years ago, many predicted the paperless office, which is still not a reality. Others say that we are underestimating the trend of robots eliminating jobs (Hamilton, 2017). The prediction that AI will lead to structural unemployment is only a possible scenario that is framed by, among others, The World Economic Forum, which is best known for its annual conference in Davos, Switzerland. This point of view makes almost no distinction between rich countries like Finland, The Netherlands, and Canada, who can afford UBI, and poor countries like India, or the Small Developing Island States in the Caribbean who cannot afford UBI. Also, these less developed countries cannot afford huge investments in education. On the other hand, islands in the Caribbean who have been coping with high structural unemployment might actually be functioning as living labs. How the structurally unemployed live in these societies might provide insight into how the unemployed could live elsewhere.

Karl Marx stated that in the industrial society, the worker has to become part of the machine and is thus estranged from his true nature. Maybe AI and other technologies will liberate the worker from this state of *Verfremdung* and restore his true nature.

21st century skills implicitly prepare people to live without a job, particularly in the following areas: Learning and innovation skills, critical thinking and problem solving, communications and collaboration, and creativity and innovation. In addition, digital literacy skills are especially important, which include information literacy, media literacy, and Information and communication technologies (ICT) literacy, in addition to career and life skills, which include flexibility and adaptability, initiative and self-direction, social and cross-cultural interaction, and productivity and accountability⁹.

The framework developed by The Center for Curriculum Design is a welcome addition to the 21st Century Skills Framework. Character and meta-learning go beyond preparing people for the labor market and being employed by a corporation. Still, there is a need to define a specific additional set of skills for living a good life without a job.

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⁹ https://en.wikipedia.org/wiki/21st_century_skills.

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