Needs for 21st Century Skills Development among Generation Z: A Case Study at Naresuan University International College

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Abstract

  21st century skills are important for the new generation, especially Gen Zers as they will be the majority population of the workplace in the coming years, meaning they need to prepare to acquire the necessary skills for their works. The objective of this research was to find out the skills and knowledge that Gen Zers in the 21st century will need to improve. The population and samples of this research were 115 Generation Z students from different majors of Naresuan University International College. The instrument used in this study was rating-scale questionnaire. The statistical values were frequency, percentage, mean, standard deviation and content analysis. The study revealed the skills the Gen Zers are interested in improving; creativity, critical thinking, problem solving, information technology skills, leadership, computer skills and ethics. However, leadership and ethics skill that are vital and listed in the top five skills for conducting business nowadays were less interested among Gen Zers. Employers seek these skills for professionalism.

Keywords: Generation zer, 21st Century skills, Naresuan University International College

1. Introduction

Generation Zers (Gen Zers) have become a large population and an important generation for the university. Whether the number of students in Generation Z entering the university will increase or not, Gen Zers will be the main population in the workforce in the near future. According to Renfro 2012, Gen Zers are between 5-25 years of age, and many demographers say that those born between 1978 and 2000 are in the same generation as the "Millennial Generation." (Tulgan, 2013). However, the advancement of technology can differentiate the generations (Postolov et al., 2017). They are in the period of the 21st century which skills have been categorized by the North Central Regional Education Laboratory (NCREL, 2003) and the Metiri Group into four categories: digital age literacies, inventive thinking, effective communication, and high productivity. With the rapid changes and advancement of the technologies, this phenomenon leads to a change of the skills needed in the workplace. The skills needed for the workplace have changed as companies are faced with the changes of the environment in the workplace and the economic situation. According to Black and Lynch and Zoghi, Mohr, and Meyer (as cited by Partnership for 21st Century Skills, 2008), companies have transformed the way they run business and how workers work so as to contribute more to business in order to ensure they are competitive in today's economy by using of workers' skills. Since employees must do more and put more effort into helping the company be successful, students seeking jobs need skills that emphasize innovation and cultural competency, as well as critical thinking, problem solving, communication, teamwork, ethical and social responsibility, and foundational reading skills and basic math (Schuele & Madison, 2010). Hodge et al, (2011) identified a list of 17 business skills that were regarded as important skills. These skills were compiled into an essential list and condensed to include the following: management skills, interpersonal skills, teamwork skills, time management skills, personal management skills, problem solving skills, critical thinking skills, technology skills, written communication skills, oral communication skills, listening skills, leadership skills, creativity skills, ethics skills, language skills (second language), and computational skills (Business School Edge, 2010; Gudim, 2010; and Fisher, Lobaugh, & Parente, 2006). According to many people, graduating from colleges and universities often is inadequate for the skills needed in the world of work. Therefore, the researcher would like to find out the 21st century skills that Gen Zers would like to get or improve in order to meet the needs of the working world in the 21st century and succeed in the competitive business world.

After reviewing the literature about the 21st century skills, the researcher categorized the 21st century skills that are necessary for the workplace nowadays into 7 skills; creativity skill, critical thinking skill, problem solving skill, leadership skill, computer skill, IT skill, and ethics skill.

This research aims to benefit educators, lecturers, organizations, and researchers in developing essential skills, especially the 21st century skills, in order to prepare effective workers for the highly competitive economy. Moreover, it will provide beneficial information for general people who are interested in improving the 21st century skills for Gen Zers.

2. Research objective

To find out the skills and knowledge that are needed to be improved among Generation Zers in the 21st century

3. Literature review

3.1 Generation Z

According to Hampton et al, (2016), each generation has a unique culture that is differentiated by social trends and world events that occur during previous years. Generations are defined as groups of people born within the same span of years who share unique indications in reference to life experiences. Experiencing the same economic, political and other major events by generational cohorts as they grew up influences individuals within the group result in similar generational attitudes and traits (Gerke, 2001; Jones, Jo & Martin, 2007). Likewise, Kupperschmidt (2000) defines generations as different groups that share year of birth, age location, and life events at critical development stages of each person. Some researchers provide the general definition that Generation Zers were born in the 1990's and raised in the 2000s during the era of changes which transformed the way of living by the Internet, smart phones, laptops, accessibly available networks and digital media (Tulgan, 2013). They are also considered as Generation I, Gen Tech, Digital Natives, Gen Wii, etc. (Sigh & Deangmei, 2016). They have been brought up in 2000s with easily accessible networks and digital media. As mentioned by Sidorcuka and Chesnovicka (2017), this generation spends their youth and adult years in an era of economic and social renewal that means they are surrounded with technology and digital devices. As indicated earlier, considering the time period during which Generation Zers were born, Generation Zers will become an important generation for the university. Whether we expect the number of high school students entering university to increase or not, Generation Zers still will be a large population and an important population group of the university in the current period. Moreover, Generation Zers represent the greatest generational shift the workplace has ever seen (Postolov et al., 2017).

Generation Zers will face the challenges for being leaders, managers, supervisors, HR leaders, and educators in every sector of the workforce (Tulgan, 2013). In addition, this generation seeks choice and/or the perception of choice in all processes and desires structure and customization in all they do (Strauss & Howe, 2000).

3.2 21st century skills

Many groups have called for all students to learn 21st century skills. In response, some organizations have developed, as part of their institutional brand, frameworks for the new millennium that delineate content and processes, which teachers should convey as part of students' schooling. How diverse are these definitions for 21st century skills, and is the term becoming an umbrella phrase under which advocates from various groups can argue for almost any type of knowledge. Lack of clarity about the nature of 21st century skills could be problematic; many educational reforms have failed because people use the same terminology, but mean quite different things. What do the various frameworks for 21st century skills have

in common? What can they add to the overarching concept of knowledge necessary for new graduates to be effective workers and citizens?

The 21st century is quite different from the 20th in regard to the skills people now need for work, citizenship, and self-actualization. Proficiency in the 21st century differs primarily due to the emergence of very sophisticated information and communication technologies (ICTs). For example, the types of work done by people as opposed to machines are continually shifting as computers and telecommunications expand their capabilities to accomplish human tasks. Economists Frank Levy and Richard Murnane (2004) highlight a crucial component of what constitutes 21st century knowledge and skills. They state that 21st Century Skills are a blend of content knowledge, specific skills, expertise, and literacies necessary to succeed in work and life in the current world. The North Central Regional Education Laboratory (NCREL) and the Metiri Group (2003) describe these skills as the outcome of 21st century learning, which emphasizes digital-age literacy, inventive thinking, effective communication, and high productivity. That means 21st century skills are more than technological literacy, instead they include proficiency in critical thinking, problem solving, communication, and team work (Paige, 2009). Furthermore, creativity and innovation continue to be competitive skills in the global market place. On the other hand, scholars suggest that creativity can be trained and developed over time in a similar way as other skills (Wegerif & Dawes 2004; Loveless 2001). The value of technological literacy has been argued in various circles, from e-learning (Lampe, Ellison and Steinfield 2006) to web 2.0 technologies (Greenhow et al, 2009). The enGauge 21st century skills take requirements for technology literacy set forth by No Child Left Behind and further define what students or the new generation need for their success in the digital age. Digital age literacy is important due to the fact that as society changes, the skills needed to participate in communities and navigate life change. Similar to Iowa essential concepts and skills for 21st century skills, a five-part framework for 21st century skills has been established as follows; employability skills, financial literacy, health literacy, civic literacy, and technology literacy. A growing number of leading businesses, politicians, educators and other concerned groups of people are focusing on the idea that students need "21st century skills" to succeed today. The Common Core State Standards (CCSS) integrated the framework of the 21st century education prepared by the Partnership for the 21st Century Skills (P21, 2006). They advocated integrating core academic knowledge, critical thinking, and social skills in teaching and learning to help students achieve in their future careers by promoting the 21st century learning systems to increase the improvement of the outcomes. Integrating the CCSS with P21 can help complete the 3Rs (core academic content mastery) and 4Cs (critical thinking, communication, collaboration, and creativity) (Partnership for 21st Century Skills, 2010). Hence, the 21 framework and the Common Core State Standards support each other to achieve the future skills that are necessary for the students' future Hodge et al, (2011) identified a list of 17 business skills that were considered important for current the business environment. These skills were compiled into a master list and include the following: management skills, interpersonal skills, teamwork skills, time management skills, personal management skills, problem solving skills, critical thinking skills, technology skills, written communication skills, oral communication skills, listening skills, leadership skills, creativity skills, ethics

skills, language skills (second language), and computational skills (Business School Edge, 2010; Gudim, 2010; Fisher, Lobaugh, & Parente,2006).

21st Century Skills (2008), found the top five skills employers sought were professionalism, teamwork, oral communication, ethics, and social responsibility, and reading comprehension. The finding suggested that business and community leaders, policy makers and educators need to work together so that the future workers will have the workplace skills that are necessary to succeed in their working circumstance. According to Ferguson et al., (2007), businesses nowadays prefer to hire the workers who can support the company and help increase profit by reducing the cost of training, and turnover and this leads to utilizing fewer resources, especially people, so the company looks for the people with high potential who are skillful. Schuele and Madison (2010) add that employees must convince the employers with critical thinking, problem solving, communication, teamwork, ethical and social responsibility and foundational skills like reading, and basic math. Similarly, the survey of the National Association of Colleges and Employers (NACE) in 2009 found that businesses are employing fewer people and expecting them to do more works, so they look carefully at the potential of employees. The survey found the top five skills needed by employers are communication skills, analytical skills, teamwork skills, technical skills, and a strong work ethic. Workers at every level in the organization need to be able to solve problems, have critical thinking, be innovative, collaborate on work effectively, and communicate effectively. Research by both Black and Lynch and Zoghi, and Meyer (as cited by Partnership for 21st Century Skills, 2008) provided the details on how companies have transformed the way they conduct business and how workers have more responsibility and contribute more to businesses in order to meet the demands of today's competitive economy. As indicated above, there are necessary skills which are the mastery skills for the workforce today. However, students do not realize the importance of possessing transferable skills, and they assume that those important skills within their discipline are enough for them to get a post-graduation position (Robinson & Garton, 2007). It can still be seen that people graduating from colleges and universities still lack the skills needed in the world of work. This lack of preparation may be the result of three factors, including failing to listen to professors and advisors, having insufficient participation in class exercises, and having inability to transfer meaning from their experiences into choices that will impact their future (Hodge et al., 2011). Therefore, they need to prepare and gain more necessary skills for the workplace in the 21st century before they leave university.

4. Research methodology

The study was carried out in cooperation with students of all four majors at Naresuan University International College (NUIC). The participants of this study included 115 Generation Zers who study in Naresuan University International College (NUIC), the majority of whom are women. The students are majoring in International Business Management, Tourism Management, Human Resource Management, and English for Business Communication and are the age of Generation Z which means the students who are in years 2-3. According to Tulgan (2013), Generation Zers were born in the 1990's and raised in the 2000s during the era of changes which transformed the way of living by the Internet,

smart phones, laptops, accessibly available networks and digital media. Therefore, for this study, the researcher conducted the survey with year 2 and 3 students who were born during 1990s and are in the age range of 20-25. They have been studying at university for some time now and are in the age of Generation Z. Moreover, especially for year 3 students, they will be going out and preparing themselves for their internships; they should know the skills they will need to operate and work in the work place. Data was analyzed using SPSS 17.0 and presented as means and standard deviation

5. Research result

The purposeful sample consisted of 115 students from four majors at NUIC. The sample can be characterized as homogenous, because all the people selected had equal opportunities to participate and the conditions for the participation were the same for everyone.

The study found that most of the skills in the list of the questionnaire were ranked in the high interest level among the students who are in Generation Z. However, the creativity skill was ranked of highest interest among those skills which are important for the Generation Zers for their future work. Creativity skills were followed by critical thinking, problem solving, information technology, leadership, computer, and the ethics skills. Following critical thinking, the next highest skill in the ranking was problem solving.

Table1: Skills respondents are interested in developing.

Skills	Mean	Std. Deviation
Leadership skill	4.2000	.70338
Computer skill	4.0783	.84964
Problem solving skill	4.2435	.73259
Ethics skill	3.9652	.84739
Creativity skill	4.3478	.71382
Critical thinking skill	4.2696	.70489
Information technology skill	4.2174	.81416

The above table summarizes the mean ($\bar{x}$) and standard deviation (S>D) of the 115 students 'responses regarding the 21st century skills that they would be interested in improving. The highest interest ($\bar{x}$ = 4.34 and S.D. = 0.71) was for the creativity skill, and the second highest skill of interest for the respondents was the critical thinking skill ($\bar{x}$ = 4.26 and S.D. = 0.70), followed by the problem solving skill ($\bar{x}$ = 4.24 and S.D. = 0.73). The next skill was for the information technology skill ($\bar{x}$ = 4.21 and S.D. = 0.81) followed by the leadership skill ($\bar{x}$ = 4.20 and S.D. = 0.70) computer skill ($\bar{x}$ = 4.07 and S.D. = 0.84). The lowest ranked skill was the ethics skill ($\bar{x}$ = 3.96 and S.D. = 0.84) which the respondents seemed not to pay much attention to improving.

6. Discussions
21st Century Skills in the Current Workplace

In this era, knowledge has become an essential aspect; people need to obtain general skills for the 21st century to enter the workforce that include; collaboration, communication, digital literacy, citizenship, problem solving, critical thinking, creativity and productivity (Voogt & Robin, 2012). According to Binkley et al. (2012), the skills in this century are categorized as follows: Ways of thinking, Ways of Working, Tools for Working, and Living in the World. A growing number of leading businesses, politicians, educators, and other concerned groups of people are focusing on the idea that students need 21st century skills to get success today. However, P21 defines the 21st Century skills as a blend of content knowledge, specific skills, expertise, and literacies necessary to succeed in work and life in the current world. According to Mayer, critical thinking relates to the development of growth of thoughts, analysis, questioning, and reflecting on realities and experiences to apply to problem solving (Mayer, 1986). Brookfield (2012) also adds that critical thinking is a survival ability, which helps facilitate people's paths through their lives. More specifically, Kunsch et al., (2014) state that well-advanced critical thinking skills are extremely needed for solving difficult business problems. According to Trilling and Fadel (2009), the important skills in this century are critical thinking and problem solving which are also necessary for learners and career seekers as a new dimension in the 21st century for the accessing, analyzing and creating information of advanced technology. Furthermore, creativity and innovation are considered as one of the competitive skills in the global market place. Some scholars note that creativity can be time consuming in training and developing programs (Wegerif & Dawes 2004; Loveless 2002). For the information technology skills, especially in this era, employees or people not only have to be knowledgeable about the technology, but they also require sufficient and effective skills in order to apply and adapt to the changing environments of the jobs (Ahmad et al., 2013; Carnevale & Smith, 2013). Technology has become a part of Generation Zers identity. Moreover, ICT skills are core skills due to the growth of globalization and the knowledge society (Lewin & Mcnicol 2015). According to the development of the global knowledge society and the rapid integration of ICT, digital skills have emerged and become the necessary skills in order to survive for employment and participation in society. In addition, along with the changes in the job markets, 21st century skills include searching and evaluating information, solving problems, exchanging information, or developing ideas in a digital context. These are perceived as essential and critical for both employees and organizations for developing new products and staying competitive in the market. Therefore, it can be said that the digital age points to the importance of digital literacy as one of the most important skills as society changes, so these skills are needed to participate in communities and navigate life's changes. Moreover, the North Central Regional Education Laboratory (NCREL) and the Metiri Group (2003) focus more on digital-age literacy, inventive thinking, effective communication, and high productivity, which means skills in this era are not only just technological literacy, but also proficiency in critical thinking, problem solving, communication, and team work (Paige, 2009). Moreover, team leader needs to care about the needs of the public and understand the stakeholders. According to Longenecker and Ariss (2002), leaders need to have the skills for being a team players, mentors, facilitators, visionaries, and entrepreneurs. The leader in this

century needs to be able to stimulate creativity / innovation and promote learning. According to Sharrat and Fullan (2012), there are three main critical leadership skills which are known ability, mobilize-ability, and sustain-ability. The Organization for Economic Co-operation and Development (OECD) also categorizes the skills for leaders in the 21st century in three broad categories as follows; foundation literacy skills (literacy, numeracy, scientific literacy, ICT literacy, financial literacy, cultural and civic literacy), competency skills (critical thinking, problem solving, creativity, communication, and collaboration), character quality skills (persistence, adaptability, curiosity, initiative, social and cultural awareness). As we have learned the skills needed in the 21st century differ from those in the 20th century. Now the workplaces need information and communication technologies (ICTs) due to the replacement of computers and telecommunications to accomplish human tasks. According to the highlight of economists Frank Levy and Richard Murnane (2004), ICTs is the crucial component of shaping knowledge and skills in the 21st century. These skills are essential in the 21st century as they are more related to the current economic and social developments than those of the past century characterized as an industrial mode of production. Moreover, Lewin and McNicol (2015) assert that globalization and the knowledge society have made the 21st century skills one of the most essential components of success in the workplace, and ICT is also considered the capital skill for the new generation's development. The way people think, solve problems, and learn new things can reflect their ability in dealing with technological functions, so they need to be more knowledgeable about specific software (Ahmad et al., 2013; Claro et al., 2012; Eshet-Alkalai, 2004).

Therefore, the new generation, especially generation Zers need to prepare themselves to gain all necessary skills for their works before entering the workplace.

Among the skills of least interest among generation Zers were computer skills, as it was replaced by ICT and the ethics skills. Although, the ethics skills are considered as one of the most important skills in running business in the current world as mentioned in review, this study found there were only a few students who showed interest of getting training. From the finding the people who are involved in this area need to consider how we can design our curriculum in order to ensure that we meet the needs of the market and how we can provide the appropriate guidelines for Generation Zers who are going to enter into the workforce in the near future.

7. Conclusion

According to this study, the results found that most of the respondents ranked their interest in improving their skills in the following order: creativity, critical thinking, problem solving, IT, leadership, computer, and ethics. These skills are significantly necessary for the workers in this century in order to compete in the competitive market. However, it was obviously seen that most of respondents pay less attention to the ethics skills which is considered as one of the 17 business skills (Hodge et al, 2011). In addition, ethics has been found in the top five skills that employers seek in professionalism along with teamwork, oral communication, social responsibility, and reading comprehension (21st Century Skills, 2008). In the present era, most of the organizations are competing globally for their best reputation, by ensuring business ethics. Therefore, it would be beneficial for both workers and employers to train for

this skill. Therefore, ethical skills need to be cultivated for Generation Zers; having employee with ethical skills can be an important factor leading a company into the competitive market. In addition, digital competence has also become a key skill as a survival skill for the digital age. According to Eshet-Alkalai (2004), a conceptual model of survival skills for digital literacy means employees or workers need to be able to utilize a digital device, and they need to be able to stress cognitive and social-emotional skills in order to perform tasks and solve problems in digital environments. That means in this century, employees are required to prepare well for the technology, and they need to have sufficient skills to adapt to the changing environments of the jobs (Ahmad et al, 2013; Carnevale & Smith, 2013). Knowledge about general computer skills probably is not enough for the needs of the labor market nowadays. Therefore, people who are interested in entering the workplace should prepare themselves to obtain these skills**.**

8. References

Ahmad, M., Karim, A. A., Din, R., & Albakri, I. S. M. A. (2013). Assessing ICT competencies among postgraduate students based on the 21st century ICT competency model. *Asian Social Science, 9*(16). 32-39.

Binkley, M., Erstad, O., Herman, J., Raizen, S., Ripley, M. & Rumble, M. (2012). *Defining twenty-first century skills. Assessment and Teaching of 21st Century Skills* pp 17-66

Brookfield, S. (2012). *Teaching for critical thinking: Tools and techniques to help students question their assumptions.* San Francisco, CA: Jossey-Bass. 280 pp. ISBN 978-0-470-88934-3

Businessschooledge.com. (2010). *21 business skills needed to succeed.* Retrieved on 20 October 2018 from http://www.businessessschooledge.com/21-business-skills-to-succeed.

Carnevale, A. P., & Smith, N. (2013). Workplace basics: The skills employees need and employers want. *Human Resource Development International, 16*(5), 491-501. DOI:10.1080/13678868.2013.821267.

Claro, M., Preiss, D. D., San, M. E., Jara, I., Hinostroza, J. E., Valenzuela, S., et al. (2012). Assessment of 21st century ICT skills in Chile: Test design and results from high school level students. *Computers and Education, 59*(3), 1042-1053. DOI:10.1016/j.compedu.2012.04.004.

Communication 10(4), article 3. Retrieved June 26, 2007 from http://jcmc.indiana.edu/

Communication 10(4), article 3. Retrieved June 26, 2007 from http://jcmc.indiana.edu/

Eshet-Alkalai, Y. (2004*).* Digital literacy: A conceptual framework for survival skills in the digital era. *Journal of Educational Multimedia & Hypermedia, 13*(1), 93.107.

Fadel, C. & Trilling, B. (2009). *21st century skills: learning for life in our times.* San Francisco: Jossey-Bass.

Ferguson, R.L. (2007). Foundational skills: The currency that purchases opportunity in tomorrow's workplace. *Techniques, 82*(6), 62.

Fisher, K. J., Lobaugh, M., & Parente, D. H. (2006). An assessment of desired "business knowledge attributes" for engineering technology graduates. **Journal of** *Technology, 23*(2), 10-15.

Frank, L. & Richard, J. M. (2004) *"With What Skills Are Computers a Complement?" American Economic Review Papers and Proceedings*, 258–262.

Gerke, M. L. (2001). Understanding and leading the quad matrix: Four generations in the workplace: The traditional generation, boomers, gen-x, and the nexters. *Seminars for Nurse Mangers. 2001, 9*(3): 173-181.

Greenhow, C., Robelia, E., and Hughes, J. (2009). Web 2.0 and classroom research: What path should we take now? *Educational Researcher, 38*(4), 246-259

Gudim. (2010). *Self-assessment of business skills check list.* Retrieved on 25 November 2018, from website: http://www.gudim.com/SkillsWorksheet.pdf

Hampton, D., Keys, Y. (2016). Generation z: Now entering our work settings. *Voice of Nursing Leadership. 2016, 14*(4): 14-16.

Hodge, K.A. and Lear, J.L., (2011). Employment skills for 21st century workplace: The gap between faculty and student perceptions. *Journal of Career and Technical Education, 26*(2).

Horrigan, J. B. (2002). Online communities: Networks that nurture long-distance

Horrigan, J. B. (2002). Online communities: Networks that nurture long-distance

Howe, N., Strauss, W. (2000). *Millennials rising: The next great generation.* Vintage Books New York.

Jones, V., Jo, J. H., & Martin, P. (2007). *Future schools and how technology can be used to support millennial and generation-z students.* ICUT 2007 (Proceedings B, pp. 886-891), 1st International Conference of Ubiquitous Information Technology

Kavanaugh, A., Carroll, J. M., Rosson, M. B., Zin, T. T., & Reese, D. D. (2005). Community

Kavanaugh, A., Carroll, J. M., Rosson, M. B., Zin, T. T., & Reese, D. D. (2005). Community

Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet

Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet

Kunsch, D. W., Schnarr, K. K., & Van, T. R. (2014). The use of argument mapping to enhance critical thinking skills in business education. *Journal of Education for Business, 89*(8), 403–410.

Kupperschmidt, B.R. (2000). Multigeneration employees: Strategies for effective management. *Health Care Manager, 19*(1), 65–76. DOI: 10.1097/00126450200019010-00011.

Lampe, C., Ellison, N., & Steinfield, C. (2006). A Face (book) in the crowd: Social searching vs. social browsing. *Proceedings of the 2006 20th Anniversary Conference on Computer Supported Cooperative Work* (pp. 167–170). New York: ACM Press.

Lampe, C., Ellison, N., & Steinfield, C. (2006). A Face(book) in the crowd: Social searching vs.

Lampe, C., Ellison, N., & Steinfield, C. (2006). A Face(book) in the crowd: Social searching vs.

Lewin, C., & McNicol, S. (2015). Supporting the development of 21st century skills through ICT. In T. Brinda, N. Reynolds, R. Romeike, & A. Schwill (Eds.), KEYCIT 2014: Key *competencies in informatics and ICT* (pp. 98-181).

Longenecker, C. & Ariss, S. (2002). Creating competitive advantage through effective Management education*. Journal of management development Vol. 21.*

Loveless, A. M. (2001). *The interaction between primary teachers' perceptions of information and communication technology (ICT) and their pedagogy.* School of Education. Brighton, University of Brighton: 390.

NCREL & Metiri Group. (2003). *EnGauge 21st century skills: Literacy in digital age*. Napierville, IL & Los Angeles, CA: NCREL & Metiri.

networks: Where offline communities meet online. Journal of Computer-Mediated

networks: Where offline communities meet online. Journal of Computer-Mediated

Paige, J. (2009). The 21st century skills movement**.** *Educational Leadership, 9*(67)**.**

paradox revisited. Journal of Social Issues,   58(1), 49–74.

paradox revisited. Journal of Social Issues,   58(1), 49–74.

Partnership for 21st Century Skills. (2008). *21st Century skills, education & competitiveness: A resource and policy guide. Tucson: Partnership for 21st century skills.* Retrieved on 22 November 2018, from http://www.p21.org/documents/21st_century_skills_education_and_competitiveness_guide.pdf

Partnership for 21st Century Skills. (2010). *Up to the challenge.* Washington, DC: Partnership for 21st Century Skills. Retrieved on 18 November 2018, from http://www.p21.org/storage/documents/CTE_Oct2010.pdf

Postolov, K., Magdiceva, S. M., & Janeska, I. A. (2017). E-Learning in the hand of generation y and z. *Proceedings of the intonation Conference "Business and Entrepreneurial Economics-BEE2017"*

relationships and local ties. Pew Internet and American Life Project. Retrieved June 26,

relationships and local ties. Pew Internet and American Life Project. Retrieved June 26,

Renfro, A. (2012). *Meet generation Z. Gettingsmart.com.* Retrieved on 2 October 2018, from http://gettingsmart.com/2012/12/meet-generation-z./

Robinson, S. J. & Garton, B. L. (2007). An assessment of the employability skills needed by college of agriculture, food and natural resources graduates at the University of Missouri-Columbia. *Proceedings of the 2007 AAAE Research Conference, 34,* 385-401.

Schuele, K. & Madison, R. (2010). Navigating the 21st century job search. *Strategic Finance.* 49-53.

Sharratt, L. & Fullan, M. (2012). *Putting faces on the data: what great leaders do***.** Thousand Oaks: Corwen Press.

Sidorcuka, I. & Chesnovicka, A. (2017). *Methods of attraction and retention of generation z staff. Vol. 5*, 2017. DOI:10.12955/cbup.v5.1030

Sigh, A. P. & Deangmei, J. (2016). "Understanding the generation z: the future workforce". *South-Asian Journal of Multidisciplinary Studies. Vol. 3(3).*

social browsing. Proceedings of the 2006 20th Anniversary Conference on Computer
social browsing. Proceedings of the 2006 20th Anniversary Conference on Computer
Supported Cooperative Work (pp. 167–170). New York: ACM Press
Supported Cooperative Work (pp. 167–170). New York: ACM Press
Tulgan, B. & Rain Maker Thinking Inc. (2013). *Meet generation z: The second generation within the giant Millennial'cohort.* Retrieved on 27 October 2018, from http://rainmakerthinking.com/assets/uploads/2013/10/Gen-Z Whitepaper.pdf.
vol10/issue4/kavanaugh.html
vol10/issue4/kavanaugh.html
Voogt, J., & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies, 44*(3), 299–321. DOI:10.1080/00220272.2012.668938.
Wegerif, R. & Dawes, L. (2004). *Thinking and learning with ICT: Raising achievement in Primary Classrooms.* London: Routledge Falmer.
Weinstein, C. & Mayer, R. (1986). The teaching of learning strategies. In: Wittrock, M., (Ed.), *Handbook of Research*