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Preferred Learning Methods of Generation Z

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ABSTRACT

Generation Z, born 1996-2010 (McNeil, 2018) is an interesting crossover from the previous Millennial Generation. There is even an overlap of years as most accounting of the birth period for Millennials is 1980-2000 (National, 2015). Though close to Millennial style due their exposure to technology, Generation Z or iGeneration has always had access to the internet, Ipods, and iphones. This instant ability to retrieve and transmit information could have a strong influence on their learning style. This paper will review Generation Z learning preferences from the literature and report on a study of Generation Z business students (N = 91) in a liberal arts university. Some comparisons are made to a 2008 study of Millennials (N = 102). For example, long term papers that were rated as unimportant by 17% Millennials regarded as even less important to Gen Z by 29%

The inclination to use e-books has increased since a survey of 74 Millennials from the same school business programs on the usage of e-books when only 25% strongly agreed/agreed and 75% disagreed/strongly disagreed (Nicholas, 2008; Nicholas & Lewis, 2008). Gen Z rents online books most or all the time at 30% and find free online book sites most or all the time at 26%.

In-class work has become a critical component for Generation Z learning as opposed to just listening to lectures. The combination of strongly agree and agree for “having to solve problems in class helps me to learn the course material” was an overwhelming 95%. Strongly agrees/agrees concerning gaining knowledge through “analyzing relevant cases helps me learn” was 90%. Understanding the preferred learning style of any student will create a positive and productive environment.

Keywords

Generation Z, iGeneration, learning, social media, digital texts, communications

1 INTRODUCTION

Generation Z (Povah & Vaukins, 2017) also known as the iGeneration (Philip & Garcia, 2013), and even M² (Rideout, Foehr, & Roberts, 2010) to build on the predecessor Millennial generation, is the newest employee group in the workforce and the current college population. Other monikers of this generation include Nexters - born 1995-2010 (Zemke, Raines & Filipczak, 2000); post-Millennials, Founders (Bealle, 2017) and even Homeland Generation (Metcalf, 2017) explained by Howe (2014) as the generation kept close to home by Gen X parents.

This learning and communication style of Gen Z is even more technically connected than the Millennials. The favored method of contact for Generation Z is text messaging, though this communication mode along with instant messaging and cell phones is also the primary tools of Millennials. Learning from grade school has incorporated web-based tools and learning management systems (LMS) such as Canvas and Blackboard, simulations, and other online methods. To Gen Z, the phone is a portable computer (Rosen, 2011). Their learning style is critical for teachers to understand as well as for employers who continue the training of this generation.

The attitudes of Generation Z students from a small private college were surveyed regarding the style of learning they use, prefer and which method has resulted most successfully in their acquiring and retaining knowledge. This research is a follow-up study of the “Preferred Learning Methods of the Millennial Generation” (Nicholas, 2008) on the learning tools of the generation born 1980 - 2000. As did the previous study of Millennial students, the specific views of Generation Z will give an illustration of the outlook of this generation that will be meaningful to educators and employers.

The primary concern of teaching Generation Z or any student is how well the pupils are learning the material. The distraction of electronics whether laptops, Ipads or phones creates a challenge to ensure if students are captivated by course material or from a recent text. E-distractions can affect the workplace environment also with supervisors disturbed by constant phone checking. However, the capability for fast note taking, a skill of Generation Z, could be useful (Cameron & Pagnattaro, 2017). They have a shorthand supplemented with emojis and by fast thumb work. Recent studies report the Generation Z attention span at 8 seconds (Sparks & Honey, 2017) down from the Millennials’ 12 seconds (Meltzer, 2017). Keeping their focus requires varying methods of stimulation and connecting them to the learning process.

2 GENERATION Z

This generation has been inundated since grade school with YouTube, e-learning, webinars, smart boards as well as smartphones which may have created their shorter attention span. They have always had instant access to information, maps, movies, Netflix, Hulu, music, shopping (Amazon prime) as well as their educational material (Rosen, 2010; Seemiller & Grace, 2016). Technology is not a tool to them; it is an ordinary part of life (Kalkhurst, 2018). They are from the age of sharing, termed by Stillman and Stillman (2017) as ‘weconomists, such as rental textbooks, Uber, skis, Airbnb, and of course, most daily actions through some form of social media.

Generation Z teens are well aware of hackers, identity thieves, bullies, predators and besides fire drills, participate in ‘shooter on site’ drills due to the many mass school killings. In spite of these traumatic issues, the study by Seemiller and Grace (2016) revealed that the majority of 759 respondents were assessed as loyal, compassionate, thoughtful and determined. The media model of Gen Z is the Alex Dunphy character in “Modern Family” as she is hard-working, conscientious, and a bit worried about the future (Williams, 2015). One study found that 60% of Generation Z high school respondents were saving for college (Romney, 2017).

They are also very connected as 100% of the 673 respondents reported going online at least once a day and noted FOMO (fear of missing out). There is an interesting spiritual connection of those who participated with organized religion, perhaps attributed to their youth, as a larger number than previous generations with Generation Z at 47%; Millennials 18%; Gen X 21%; and Boomers 26%. As to social issues, they were found to be mostly liberal, but moderate in financial issues, table 1 below depicts the political opinions of Generation Z.

N 618	Social issues	Financial issues
Liberal	40%	17%
Moderate	38%	51%
Conservative	22%	32%

Table 1. Generation Z Social Opinions Source: Seemiller and Grace, 2016

The research, consulting and social marketing company of Sparks & Honey dates Gen Z from 1998-2014 and reports that though Generation Z has continually known the internet and smartphones, they are not always connected (Sparks & Honey, 2017) which counters other research. For example, Bencsik, Horváth-Csikós and Juhász (2016) assert “they are always online on any technical device virtually, with no stop.”

Generation Z has a focus more on quickness than accuracy. They have developed in an age of high-speed technology, icons, ease of use apps, and marketed to by companies through Facebook and Twitter. They have global interactions with online acquaintances in Habbo Hotel, and even early access to unreleased songs as Farmville fans (Grail, 2011). “Overwhelmingly, young people have faith in technology: 84% of young people globally say that technical advancements make them hopeful for the future.” (Broadbent, Gougoulis, Lui, Pota & Simons, 2017).

Intrapersonal rather than interpersonal study habits are part of their persona. A workforce study of 410 employees (Bencsik, Horváth-Csikós & Juhász, 2016) with approximately one-third of them Generation Z, found that conflict in the workplace happens from Generation Z’s overconfidence, communication styles, and intolerance of criticism.

Communication style

There are other changes from Millennials even in the past few years, according to a Pew Research Study, such as the decline in the usage of Facebook from 71% in 2015 to 51% in 2018. This is lower than the use of YouTube at 85%,

Instagram 72% and Snapchat 69% (Anderson & Jiang, 2018). Among Generation Z, 95% have or have access at home to a Smartphone. Another name for Generation Z has been ‘hashtag generation’ (Semiller & Grace, 2016) whose tweeting of terse communications using 140 characters evoked concerned over clear communications. Twitter doubled to 280 characters in late 2017 (Sulleyman, 2017) so there could be extended writing. (Stillman & Stillman, 2017).

3 LEARNING PREFERENCES OF GENERATION Z STUDENTS

These digital natives have immediate access to answers and expect rapid response times. Perhaps it is less about the process of learning than the quick acquisition of any needed information (Purcell et al., 2012). This generation has been found to have more daily visits to YouTube, 72%, than Millennials at 52% (Claveria, 2017). It is touted as being a favorite method of learning (Duffy, 2018) with students reporting they found how to change the oil in their vehicle and other needed or desired tasks.

Lack of creativity or team togetherness

Gen Z students want to have exact directions guiding their work and were least interested in creative assignments. According to the study of Edelman Berland, students come from high schools of standardized testing and many assessments but with reduced arts/sports (Nagal, 2013). This gives little time for creative thought so if creativity was not a practice in high school, it cannot be expected to be favored in college. Students in this generation often balk at open ‘develop it yourself’ projects and seek exact directions and examples to follow.

Whereas the Millennials used social media, emails and other technology for school group work (Nicholas, 2008), Generation Z prefers to work independently even in a team setting through google docs (Semiller & Grace, 2016). The author has experienced this first hand when, mid class, students teams were assigned to group tables to continue work on their case projects to find some members of the team did not change tables but professed to working ‘together’ through google docs.

Learning tools and methods

In the Barnes & Noble College (2016) survey of 1300 middle and high school 13-18 year-olds from 49 states, respondents reported most helpful tools for learning (see Table 2), the kind of education technology they expect in classrooms and the helpfulness of education technology tools and other topics.

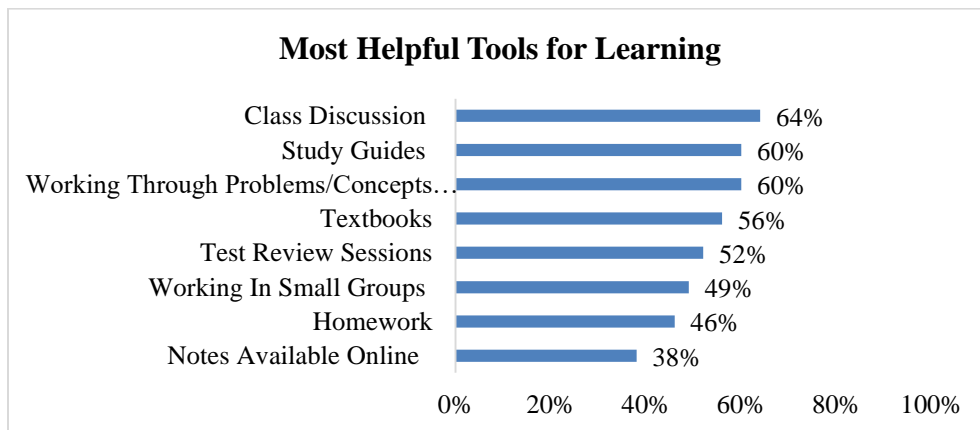


Table 2. Source: Barnes & Noble College, 2016

It is not surprising that among these future college students 64% wanted websites with study materials in the classroom, 50% - DVDs (with the streaming talks now it already seems dated but grade schools may have limited access), 46% wanted smartboards/digital textbooks, 45% - online videos and 42% wanted learning websites. The usefulness factors were rated

Smartboards	84%	Game-based learning systems	79%
Do it yourself learning	81%	Textbook	77%
Digital textbooks	81%	Social media/user-generated,	74%
Website with study material	81%	Skype	73%
Online videos (YouTube, etc.)	80%	Podcast	72%

DVD/movie 61% (Barnes & Noble, 2016).

Other data from the Generation Z survey regarding how the students learn (perhaps worded differently as the same study reported ‘working through problems/concepts’ at 60%) was:

By doing (working through examples, etc.) 51%
 By seeing (reading course materials) 38%
 By listening (classroom lecture) 12% (Barnes & Noble, 2016).

The study of Seemiller and Grace (2016) had similar responses to working through examples as a method for learning with the majority of Generation Z students - 79%, wanted practical experiences such as projects, internships. It is clear they prefer teachers as facilitators rather than lecturers (Semiller & Grace, 2016).

Doing research

In the Pew Research study (Purcell, et al., 2012) of teachers reporting how their students do research the following areas were listed:

Google/ online search engines	94%	Major news organization sites	25%
Wikipedia/online encyclopedias	75%	Print/electronic textbooks	18%
YouTube/ social media sites	52%	Online databases (EBSCO/Grolier)	17%
Their peers	42%	Research librarian (school/public library)	16%
Spark/Cliff Notes, study guides	41%	Printed books (not textbooks)	12%

Student-oriented search engines such as Sweet Search 10% (Purcell et al., 2012).

Lectures and printed books did not rate highly with Generation Z and technology has unquestionably transformed their learning process. According to Semiller and Grace (2016), 85% of students use online research for assignments – again, no need for interaction with librarians or other students. In a Harris Poll of 2,587 14-40 year-olds, Generation Z, only 47% preferred a printed book compared to 60% by Millennials. In this same poll, over 2/3rds of Gen Z thought college was a significant toward future success (Pearson, 2018). It is important that the coursework has relevance to their lives and intended careers (Cameron & Pagnattaro, 2017).

4 METHODOLOGY

Business students of a small, private New England university were invited to participate in an online survey sent to students through an e-mail invitation. This paper addresses the questions regarding the learning preferences of Generation Z. What are primary learning methods for this iGeneration of students? Which teaching format is preferred? How do they try to improve their learning? The survey instrument included some items adapted from a previous study by Messineo, Gaither, Bott & Ritchey (2007) that focused on college students’ preferences of learning class material, specifically for active learning in large classes. Additional created items included locations of studying and attitudes toward learning with technology and books/materials used.

5 RESULTS

The basic percentages of selected items in the survey are reported in tables below. One section of the survey on the best way to expand learning included three items on listening and three items on reading such as “listen to my professor explain what the textbook says” and “read the textbook and make sense of it myself” were combined and evaluated through regression analysis with Multiple R and P-Value measurement. The results showed a significant preference to listening to the material (passive) rather than reading the material (active). This contrasts the Barnes and Noble (2016) study that reported 38% reading and 12% listening preference.

These preferences of Generation Z for learning material were asked in strongly agree to strongly disagree scale (see Table 3).

N=83	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
I prefer PowerPoint slides with lecture in the classroom	45.8	45.8	4.8	3.6

I learn from news/video/You Tube clips that relate to class material	45.9	37.4	14.5	2.4
I like a mixture of activities (lecture, group, work, discussion, problem solving) in a large class.	45.8	47.0	6.0	1.2
Having to solve problems in class helps me learn the course material.	42.1	53.0	4.8	0.0
I am interested and willing to do work that will help me to learn the course material but is not graded.	26.5	56.6	14.5	2.4
Taking a chapter quiz before class motivates me to learn the material.	19.3	39.8	36.1	4.8
I prefer lecture as the format of class instruction.	20.5	45.8	24.1	9.6
I consider class discussion in small groups with other students to be a valuable way to learn the course material.	27.7	48.2	21.7	2.4
Working with other students on an in-class activity helps me feel more prepared to participate in class discussions.	31.3	60.2	7.2	1.2
I think doing group work in class is a valuable way to learn material.	30.1	53.0	14.5	2.4
I prefer multiple-choice exams compared with essay exams.	51.8	34.9	12.1	1.2
Analyzing relevant cases helps me learn.	28.9	61.5	9.6	0.0
I think frequent quizzes on the readings or assignments are a good idea.	18.1	51.8	21.7	8.4
I prefer to have more frequent exams and a variety of ways to earn grades.	31.3	38.6	25.3	4.8

Table 3: Gen Z Course learning tools

Learning aids for class

The following items were compared with the Millennial survey (Nicholas, 2008). Thankfully, the majority of students agree that reading the material before class is helpful. Disturbingly, there was an increase in disagrees for Gen Z with 23.1% compared to Millennials 13.7% who disagreed that reading material before class was helpful. Also there was a majority of students in both generations who disagreed with listening to recorded lectures as a learning aid (67.1% Gen Z and 88.4% Millennials) (see Table 4).

N=91 Gen Z <i>N=102 Millennials</i>	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
Hand written notes in lecture classes	41.8 37.3	47.3 54.9	8.8 3.9	2.2 3.9
Typing notes in class	17.6 14.7	35.2 37.3	35.2 38.2	12.1 9.8

N=91 Gen Z <i>N=102 Millennials</i>	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
Adding notes in class to printed PowerPoint slides	16.5 <i>26.5</i>	44.0 <i>52.0</i>	33.0 <i>13.7</i>	6.6 <i>7.8</i>
Typing notes in class in PowerPoint slides	7.7 <i>7.8</i>	18.7 <i>26.5</i>	56.0 <i>52.9</i>	17.6 <i>12.7</i>
Reading the material before class	25.3 <i>29.4</i>	51.7 <i>56.9</i>	16.5 <i>10.8</i>	6.6 <i>2.9</i>
Reading the material after class	26.4 <i>27.5</i>	49.5 <i>55.9</i>	22.0 <i>13.7</i>	2.2 <i>2.9</i>
Listening to recorded lectures	6.6 <i>2.9</i>	26.4 <i>18.6</i>	42.9 <i>48.0</i>	24.2 <i>30.4</i>

Table 4: Gen Z and Millennials class learning aids

Using the scale of very important to unimportant, other preferences were surveyed. The italicized numbers are from a previous study (Nicholas, 2008) of Millennials. The importance of case analysis, team case studies and presentations shows an increase. Long term papers, the least value to Millennials are even less desirable to Gen Z (see Table 5).

N=73 Gen Z <i>N=82 Millennials</i>	VERY IMPORTANT	IMPORTANT	SOMEWHAT IMPORTANT	UNIMPORTANT
Case analysis	23.3 <i>23.2</i>	58.9 <i>46.3</i>	16.4 <i>26.8</i>	1.4 <i>3.7</i>
Take home tests	28.8 <i>30.5</i>	46.6 <i>48.8</i>	20.6 <i>14.6</i>	4.1 <i>6.1</i>
In class tests	19.2 <i>35.4</i>	54.8 <i>52.4</i>	20.6 <i>9.8</i>	5.5 <i>2.4</i>
Multiple choice tests	35.6 <i>42.7</i>	50.7 <i>45.1</i>	13.7 <i>11.0</i>	0.0 <i>1.2</i>
Essay answer tests	16.4 <i>19.5</i>	42.5 <i>45.1</i>	34.3 <i>29.3</i>	6.9 <i>6.1</i>
Short papers	19.2 <i>32.9</i>	49.3 <i>47.6</i>	28.8 <i>17.1</i>	2.7 <i>2.4</i>
Long term papers	5.5 <i>13.4</i>	24.7 <i>29.3</i>	41.1 <i>40.2</i>	28.8 <i>17.1</i>
Individual researched presentation	13.7 <i>26.8</i>	49.3 <i>35.4</i>	26.0 <i>23.2</i>	11.0 <i>14.6</i>
Team presentation	30.1 <i>20.7</i>	45.2 <i>37.8</i>	20.6 <i>22.0</i>	4.1 <i>19.5</i>
Individual case study	12.3 <i>18.3</i>	35.6 <i>32.9</i>	43.8 <i>30.5</i>	8.2 <i>18.3</i>
Team case study	21.9	43.8	31.5	2.7

N=73 Gen Z N=82 Millennials	VERY	IMPORTANT	SOMEWHAT	UNIMPORTANT
	IMPORTANT		IMPORTANT	
	9.8	39.0	32.9	18.3
Doing work for a real client.	49.3	42.5	8.2	0.0
	<i>Not asked</i>			

Table 5: Tests, papers, and team work

Preference of book version

Many students find alternatives for required textbooks including renting and finding free online site (see Table 6).

	N=73	NEVER	SOMETIMES	MOST OF THE	ALL OF THE
				TIME	TIME
buy the hardcopy book		19.2	53.4	16.4	11.0
rent the hardcopy book		8.22	23.3	49.3	19.2
rent online book		37.0	32.9	26.0	4.1
find free online site for book		34.3	39.7	9.6	16.4
do not get the book		60.3	32.9	4.1	2.7
borrow the book		39.7	50.7	9.6	0.0

Table 6: Textbook usage

The inclination to use e-books has increased since a survey of 74 Millennials from the same school business programs on usage of e-books when only 25% strongly agreed/agreed and 75% disagreed/strongly disagreed (Nicholas, 2008; Nicholas & Lewis, 2008). Gen Z rents online books most or all the time at 30% and find free online book sites most or all the time at 26%.

Web-based material

Generation Z was queried on the types of internet sources used for assignments. Below is the comparison percentages of Gen Z and Millennials (Nicholas, 2008). Though Millennials were not asked about simulations, 57.2 % of Gen Z used them sometimes and 7.7% often (see Table 7).

N=91 Gen Z N=102 Millennials	OFTEN	SOMETIMES	NEVER	NOT HEARD
				OF IT
E-books (Ebrary, NetLibrary, Credo, etc.)	11.0 6.9	66.0 36.3	16.5 43.1	6.6 13.7
E-journals (Ebsco Academic Premier, JSTOR, Wilson)	13.2 22.5	61.5 46.1	18.7 24.5	6.6 6.9
E-newspapers (Proquest, LEXIS/NEXIS, etc.)	6.6 18.6	45.1 42.2	38.5 32.4	9.9 6.9
Audio books	3.3 0.0	39.6 19.6	57.1 69.6	0.0 10.8
Web sites (personal)	53.6 66.0	44.0 26.5	2.2 7.8	0.0 2.0

	OFTEN	SOMETIMES	NEVER	NOT HEARD OF IT
N=91 Gen Z <i>N=102 Millennials</i>				
Web sites (corporate)	51.7 <i>80.4</i>	48.4 <i>18.6</i>	0.0 <i>2.0</i>	0.0 <i>1.0</i>
Web sites (educational, governmental, professional)	65.9 <i>87.3</i>	34.1 <i>11.8</i>	0.0 <i>0.0</i>	0.0 <i>1.0</i>
Blogs/wikis	17.6 <i>15.7</i>	70.3 <i>26.5</i>	12.1 <i>55.9</i>	0.0 <i>3.9</i>
Google	89.0 <i>98.0</i>	11.0 <i>1.0</i>	0.0 <i>0.0</i>	0.0 <i>1.0</i>
Wikipedia	28.6 <i>57.8</i>	59.3 <i>25.5</i>	12.1 <i>16.7</i>	0.0 <i>1.0</i>
Alerts/RSS	3.3 <i>3.9</i>	47.3 <i>17.6</i>	22.0 <i>44.1</i>	27.5 <i>34.3</i>
Social web applications (Discussion boards, YouTube, etc.)	44.0 <i>32.4</i>	51.6 <i>35.3</i>	4.4 <i>33.3</i>	0.0 <i>2.0</i>
Simulations	7.7 <i>Not asked</i>	57.2	27.5	7.7

Table 7: Electronic resources

6 LIMITATIONS

Although large enough to make generalizations about attitudes, the sample size of Generation Z may reflect a distinguishable attitude of a population from a private school in the northeast United States. The sample also only included those Generation Z in the advanced stages of education, an opportunity not available for all Generation Z or preferred (Vartan, 2018).

7 CONCLUSIONS

Technology has a strong impact on the learning of Generation Z which supports the findings of the Barnes and Noble (2016) and the Pew Research study (Purcell, et al, 2012).

Both generations who disagreed with listening to recorded lectures as a learning aid (67.1% Gen Z and 88.4% Millennials). This does not exclude videos as a preferred method as the study by Pearson and the Harris poll “Beyond the Millennials: The Next Generation of Learners” (Cameron & Pagnattaro, 2017) found Generation Z enjoyed videos such as YouTube “well ahead of lectures, in-person collaboration with classmates, learning applications, and books” (Ascione, 2019).

Additionally, college students have a preference to learn practical knowledge to apply for future employment or ventures. This may relate to the heightened fear of debt for a college education that may not result in adequate opportunities for repayment (Pringle, 2018). Gen Z was strongly in favor of learning with a real client (not asked of Millennials) with 49.3% very important, 42.5% important, 8.2% somewhat important and none of the students felt it was not important. Students have the opportunity to work with real clients with some class projects and all business students are required to complete a capstone four-credit course that combines student teams with clients. This interactive learning that allows students to apply their academic, collaborative and analytical skills has been described as transformational and beneficial for both clients and Generation Z students (Gardner, Ronzio & Snelling, 2018).

The practicality of working in teams for case studies and presentations were of more importance to Generation Z than Millennials (see Table 5). For example, the team case study was considered very to somewhat important by 97.2% of Gen Z but only by 81.7% of Millennials. Similar to differences of the importance of team presentations, the important to somewhat important percentage of Gen Z was 95.9% but to Millennials it was 80.5%. Both

certainly indicated that teamwork was important, but more so to Gen Z. A recent study (Simoes & Ribeiro, 2018) compared three sessions of two classes with 30 students each; one class worked in teams of five and the other did not include teamwork. The team-based classes, 95% reported that the “collaborative environment contributed for their personal achievements, capabilities and competencies (Simoes & Ribeiro, 2018, p.149).

Providing a vibrant learning environment for Generation Z will require creative approaches that combine social interactions, technology, and assignments that simulate real-life work situations or are community outreach projects. New technology platforms may be required as well as faculty development to learn methods for teaching Gen Z that includes more than technical approaches (Teaching Generation Z, 2015-2106). Genuine interests in educating students to become continuous learners will always be a critical component.

8 FUTURE RESEARCH

A meaningful follow up for this study of Generation Z would be of their success in the workplace: how they have advanced, promotions, entrepreneurship, and performances in the gig economy. Comparison with Generation Alpha born 2010-2025 (Vargason, 2017) as the standard 20 years of a generation has been reduced in the recent cohorts could be another investigation. It would be also of interest to know what changes have been adapted for the learning methods of new generations.

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