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A systematic review of educational suggestions on generation Z in the context of distance education

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Abstract

Gen Z stands out as a new age learner group in the context of open and distance learning. Research shows that Gen Z has different needs and expectations form their predecessors; therefore, new educational interventions are required. The purpose of this study is to examine the suggestions of the scientific articles on Gen Z to draw educational conclusions. This systematic review includes educational suggestions (n = 77) of 59 articles selected from search results on Scopus, Google Scholar and ULAKBİM. The suggestions were coded and themed. Then, percentage and frequency analyses were made with the codes obtained. The main categories that emerged were speed, motivation, content, learning environment and active learning. Highlights of these suggestion categories are: rapid delivery of student feedback under the speed category, job-oriented education under the motivation category, use of student-produced content under the content category, paying attention to updating and following the digital contents under the learning environment category, learning autonomy acquisition practices under the active learning category. These educational suggestions are thought to help researchers and educational specialists who try to understand the generational differences and especially the features of Gen Z.

1. Introduction

> "*To understand a generation is to understand an era. When you understand an era, you get rid of being stuck in the grip of the paradigm. And you will be able to see those who are not like you, not within your own judgments, but with their own truths."* (Kuran, 2019)

The concept of "generation" is used to analyze the transformations of individuals and societies and covers periods of 15-20 years. It can be defined as a group of people who were born in more or less similar years, have the conditions of the same age, thus experience similar troubles and destinies, and are responsible for similar duties. The generational phenomenon (Plitcher, 1994), first discussed in Karl Mannheim's article "The Problem of Generations" in 1923, later became popular as a theory by the work of William Strauss and Neil Howe in the early 1990s (Howe & Staruss, 1992). The theory suggests that each of the generations named as Traditionalists, Baby boomers, X, Y and lastly Generation Z (Gen Z), which is the subject of this study, is based on various technological, economic and social changes and is claimed to have different interests, needs and reactions (Turner, 2015). The generation concept has gained attention in higher

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education as the new age learners started to confuse the faculty by their new and unusual stands, needs and preferences. In the context of open and distance learning, the concept of generation can be used as an analysis tool to better understand the characteristics of the target audience and therefore to create engaging and meaningful learning environments which will stimulate learners to greater efforts.

Considering that Gen Z, who started higher education in the late 2010s and was born in a period from the mid-1990s to the second half of the 2000s (Dimock, 2019; Turner, 2015), has grown up in a digital world surrounded by an unprecedented speed of technology integration and information-communication network, it can be said that they are a different group of learners from the previous generations in terms of their career expectations and higher education needs (Özsari and Saykili, 2020; Somyürek, 2014). In order to bridge the possible expectation differences between the experienced academic staff and younger generations, it is necessary to know the general characteristics of current students and what they need as learners. Besides, the relevant literature is missing a comprehensive yet simple categorization of repeated educational suggestions for Gen Z learners. Therefore, the purpose of this study is to examine the suggestions of articles on Gen Z to draw educational conclusions for better learning environments which could cater for the needs of new age learners.

2. Literature

The Post-Millennial Generation, also known as Gen Z, iGen or Zoomers, refers to those who were born between mid-to-late 1990s and the early 2010s (Schroth, 2019). They are the first demographic cohort who has grown up with access to the internet and mobile digital technology and therefore called "digital natives" (Prensky, 2010) who are considerably different from their predecessors.

It is known that Gen Z learners are more equipped with technology then their instructors (Saxena and Mishra, 2021). A number of researchers have shown that the Gen Z perceives smartphone technology and social media as a natural element (Zhitomirsky-Geffet & Blau, 2017). Their habitual use of WhatsApp and social media points to the potential effectiveness of using these platforms for mobile learning. It is also implied in many studies that Gen Z expects a learning environment that is similar to their virtual world (Cilliers, 2017). They expect quick results, answers, and rewards (Cilliers, 2017; Opriș, and Cenușă, 2017; Vikhrova, 2017) and have low attention span (Opriș, and Cenușă, 2017). It has also been shown that they prefer visual learning (Cilliers, 2017), use of technology for interactions (Kushnir et al., 2013), obtaining information quickly and entertainment (Vikhrova, 2017). Gen Z students also prefer collaborative learning

and learning independently, at their own pace (Moore & Frazier, 2017). Figure 1 shows the characteristics and preferences of Generation Z learners from various sources.

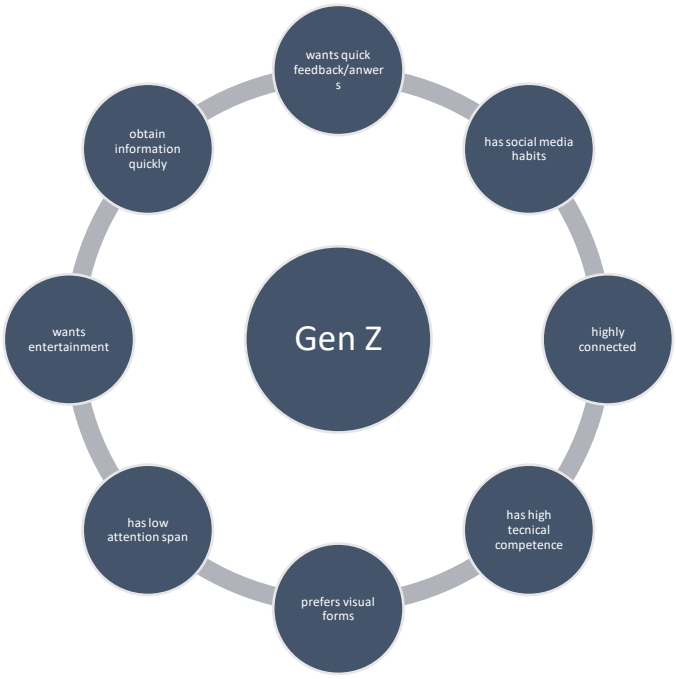

Fig. 1. Gen Z learner characteristics and preferences (adapted from Wahab et. al., 2018).

As shown in the figure, a learning environment which appeals to Gen Z learners should consider elements such as technology, social media, visual forms, speed and also entertainment.

There are not many systematic reviews on Gen Z learners. In Loring and Wang's (2021) systematic study on Gen Z in the context of human resource development, they examined a total of 21 articles related to employee engagement, professional selling and Gen Z and found that Gen Z's organizational need for mentoring and their characteristic of wanting job control and ownership are crucial for employee engagement (Loring and Wang, 2021). In another systematic review study, Saxena and Mishra (2021) analyzed the use of gamification as a tool for motivation and engagement for Gen Z in higher education. Examining 29 articles, they concluded that "games may probably aid motivation and engagement of learners enhancing their intellectual activities by enriching their learning journey in a classroom" (Saxena and Mishra, 2021).

There is a growing interest and a number of studies regarding Gen Z in the field of education. Revealing the general direction of the findings and most repeated suggestions of these studies could be beneficial for open and distance education institutions to adapt themselves for this new target group and to increase the quality and attractiveness of the service they provide for their students. However, there is little systematic knowledge available regarding Gen Z learners. In the light of this identified gap in the academic insight, the purpose of this study is to systematically examine the suggestions sections of the scientific articles on Gen Z in Turkish and international databases. For this purpose, answers to the following questions were quested:

1. What are the educational suggestions of the articles regarding Gen Z in the field of educational sciences?

2. What are the educational suggestions of the articles regarding Gen Z in other social sciences?

3. What are the most repeated educational suggestions?

4. What are the themes of the educational suggestions?

3. Methodology

3.1. Research Design

This study is a systematic review of selected articles on Gen Z in educational context. Systematic reviews are viewed as a group of research approaches that are a form of secondary level analysis (secondary research) that gathers the findings of primary research to answer a research question. Systematic reviews can therefore be referred as "a review of existing research using explicit, accountable research methods" (Gough et al. 2017, p. 4).

3.2. Data Collection

Scopus and Google Scholar were used complimentarily to reach the studies in the literature and ULAKBİM database was used to reach the studies on Gen Z in Turkish. Since the qualities such as research methods, data collection tools, data analysis methods of the articles were not meaningful in the scope research questions, a publication classification form was not adopted by the author. Rather, among all the articles published between 2016 (since the studies on Gen Z began to be conducted) and 2020 in the relevant literatures (English and Turkish) the ones which include educational suggestion/s regarding Gen Z were selected in the first phase of data collection process.

To reach the scientific articles in the literature, the key words of "Generation Z" and "Gen Z" were searched on Scopus database and a total of 431 articles were found. Next, the search was limited to only the study subjects of "social sciences", "computer sciences", "arts and humanities", "psychology" on the subject area section since these subject areas were agreed to be useful in the context of distance education of Gen Z students. In addition, the document type was set to be "articles" only and 163 articles published between 2016 and 2020 were reached. The full texts of these articles were tried to be reached on Scopus database from the latest to the older ones and recorded in a folder by the author. The articles which could not be reached on Scopus were also searched on Google Scholar and the reached ones were also included in the study.

In the second phase of data screening process, the abstract sections of the recorded articles were reviewed and irrelevant articles focusing on religious literacy, fashion design, adherence to religious beliefs, dietary habits, organic products, work ethics, politics, election surveys, Gen Z journalists, applied sports science, hotel preferences, consumer preferences, luxury, bank card use, gastronomy, shopping intentions, customer relationship management, online recruitment, individual finance literacy management, sustainable food consumption, retail, hotel thefts, workplace selection, digital technology use in payments, sharing economy, attitudes towards aging, recreational activity preferences, commercial communication, smoking habit, addictive behavior of Gen Z were excluded from the study. Besides, the articles that could not be reached in full text and were written in Russian had to be removed from the list. At the end of this process, 77 articles were obtained and recorded for the review. During the content analysis process, the articles that were deemed not suitable for the purposes of this study in terms of findings, conclusions and suggestions were also eliminated from the study. Finally, 54 studies were selected for the descriptive analysis of the data.

In order to reach the studies in Turkish, only research and review articles were searched between 2016-2020 by typing "Z kuşağı" The Turkish words for Gen Z) into the search bar on DergiPark journal management system. Eight articles were found in the category of social sciences and interdisciplinary, but these articles were identified to be unrelated to the research topic. In the category of education and educational research, seven articles were detected. However, these studies were not included in the study since one of them was already reached on Scopus database before and the others were either too local or out of the scope of this study due to their focus (career stress, risk perception, career barriers, etc.) No

articles on the subject of the study were found during searches in the subject areas of psychology and computer sciences and information systems. In the research conducted in the subject category of education, scientific disciplines, 21 articles were detected. After eliminating the ones which are unrelated to this study due to their focus points (Y generation, the effect of distance education on success, the effect of social network sharing on reading, scale development, accounting education, adaptation of the study skills inventory to Turkish, instructional design studies), seven studies were obtained and recorded. Finally, during the content analysis process, two articles were decided not to serve the purposes of this study and were excluded from the analysis. Only five articles were included in the descriptive analysis as a result of this elimination process. The number and distribution of the articles included in the data analysis are given in Table 1 below.

Table 1.

The number and the distribution of the articles

Literature	Field of study	(n)
in English	Education	40
	Other Social Sciences	14
	Total	54
in Turkish	Education	5
	Total	5
TOTAL		59

3.3. Data Analysis

Content analysis method was used in the analysis of collected data. Suggestion sections of the articles, or in case there were no suggestions sections, discussion and conclusion sections or comments included in any part of the results of the article were examined, the educational suggestions found as a result of these examinations were coded. Since the codes will be in the form of suggestions, they are expressed in sentences, not in phrases. Then, descriptive analysis, which included percentage and frequency analysis of the suggestion codes, was carried out on the quantitative data of these codes. Finally, the codes were categorized into themes and presented in a table with the shortened suggestions.

In order to ensure the validity and reliability of the study, the coding scheme was reviewed by a second independent coder and two separate meetings were held to confirm that the codes represent the entire raw data and to eliminate disagreements between the coders.

3.4. Findings and Discussions

There were two groups of codes consisted of educational suggestions and findings in the field of educational sciences and other social sciences. During the descriptive analysis of the data, firstly these two groups of codes were subjected to frequency analysis separately. Since more than one suggestion can be found in a study, the total number of suggestions in frequency analysis is higher than the number of articles included in the study. Therefore, in the analysis, (n) shows the total number of suggestions in the relevant field. Table 2 shows the coding scheme and the sample data for the codes.

Table 2.

Coding Scheme

Codes	Labels	Sample Data
The Field of Education (For) Gen Z…		
finds online environments that support inclusive education and multicultural education practices more beneficial.	E1	"As teachers and staff share in the development of students, they may join in the transformative learning process vis-à-vis context, experience, reflection, action, and evaluation—each component, building upon the other.."
needs more frequent and faster feedback and guidance than other generations.	E2	"Generally, these students sought attention, feedback, and guidance from online chairs"
uses the internet mostly to reach information and search for news.	E3	"The main type of teenage activity on the Internet is searching for information for educational purposes and searching for the news"
technology-rich practices such as the flipped classroom and blended learning environments are positive in terms of knowledge and skills building and engagement.	E4	"This study also confirms that the flipped classroom has positive effects on students' knowledge, skills, and engagement"
educational applications such as online games and competitions have shown a positive effect in terms of success and satisfaction.	E5	"The results of this study reveal that the use of the Kahoot application has a positive impact on students' achievement results"
usually prefers visual materials in their education processes.	E6	"They prefer visual learning"
prefers instructional designs that are short and effective, as they have short attention spans and are accustomed to acquiring information quickly.	E7	"and they exhibit lower attention time"
Higher order thinking skills (planning, monitoring and evaluating their own learning) bring success in online environments.	E8	"both generations indicated that metacognitive and thinking skills were a key to success in a fully online course"
There should be reflective thinking activities.	E9	"The students were transformed through the experience of reflecting as they told stories of practice"
there should be formal educational practices for their digital competencies.	E10	"acquisition of digital competences is not inherent to use, but require specific instruction"
Nomophobia (fear of lack of mobile technology) is high, so there should be necessary educational applications for this.	E11	"We frame nomophobia in sleep disturbances which makes Gen Z adolescents vulnerable to temptation"
is interested in student-produced content and learning practices based on these contents.	E12	"The result showed that Generation Z has a positive intention to use LGC"
is more distant to group work practices.	E13	"appeared to be more anxious than the earlier cohort "because (they) fear that group members will not produce up to ... expectations,"

active learning practices should be emphasized.	E14	"using technology and adult and active learning principles will help reach Generation Z"
mobile technologies and applications affect the learning process positively.	E15	"mobile technologies will help to optimize and to improve the learning process, as well as to increase pupils' activity at school"
Digital content for educational purposes should be updated and monitored frequently.	E16	"The challenge is not to post the content the first time, but having the resources and capital to keep the content updated and relevant"
technology-assisted traditional classrooms are more effective than flipped classrooms.	E17	"Students over- all preferred a traditional classroom model instead of a flipped classroom"
is more willing to share knowledge.	E18	"Women and generation Z had higher motivation for information sharing"
prefers process evaluation	E19	"evaluating students from the process and students' development rather than the outcomes or products were considered preferable."
requires critical thinking skills training.	E20	"It identifies that teachers in higher education should develop eight main competencies: facilitating the educational process, stimulating critical thinking of students"
learners have a higher level of digital knowledge	E21	"having the generation Z the best digital capabilities, with an average of 61.94% "
TOTAL	21	
Other Social Sciences (For) Gen Z…		
prefers trending social media platforms and finds it more motivating.	S1	"Snapchat represents one of the communication channels the Generation Z find attractive and popular"
finds multicultural work environments more motivating.	S2	"Generation Z representatives are willing and ready to work in a multicultural business environment, making the world even more interconnected and globalized"
job-oriented training opportunities are more motivating.	S3	"Job training appropriateness" was found to be an important moderator for improving the relationships between Gen Z volunteer attitudes and job performance"
uses social media accounts mostly for self-expression.	S4	"Maintaining relationship may be a defining role for using, but mainly it is because they desire to express themselves to.."
expects emotional support for their problems with family and friends.	S5	"In the case of Z generation, the priority in providing emotional support was related to providing emotional support while solving problems in their families and among closest friends"
has a hard time admitting their mistakes in interpersonal communication.	S6	"The new generation (Z) senior school students were reluctant to acknowledge their mistakes during interpersonal conflicts"
are less willing to hide their personal information and experiences.	S7	"In the group of self-disclosure skills there emerged the ability of the generation Z senior school students to fully trust their closest interlocutor and take off their 'masks', the ability to tell a close interlocutor things that were deeply worrying for them"

expects their instructors to be more technology proficient than they are.	S8	"Students often outdo their teachers in the ability to use new technologies, and expect changes to be taken into account in the educational process"
interfaces for online media should be easy, simple and flexible.	S9	"Designing and developing modern software with an easy and flexible user interface that improves the motivation"
VR applications have a positive effect on learning.	S10	"The implementation of a virtual reality simulation into an inter- professional course had a positive learning effect"
their digital identities affect their real personalities more than other generations.	S11	"The types of data (name, gender) which were previously filled in formally have now become a means for self-presentation affected by Internet discourse"
if they are wanted to interact, the only way is to persuade them.	S12	"The only way to interact with them is through persuasion"
gives importance to security and stability in the business environment.	S13	"This study confirms than Gen Z wants stability and security when looking for a job after they graduate"
TOTAL	13	
TOTAL CODES	34	

After the coding process, the codes were counted and subjected to frequency and percentage analysis. Table 3 shows the findings of the analysis for the suggestions in the field of education and this answers the first and third research questions.

Table 3.

Frequency and Percentage of the Codes for Suggestions in the Field of Education

Codes	**Labels**	**Frequency (f)**	**Percentage (%)**
In the field of education (For) Gen Z …		**n=77**	
wants feedback and guidance more frequently and faster than other generations	E2	9	11,6
Usually prefers visual materials in education processes	E6	8	10,3
mobile technologies and applications affect the learning process positively.	E15	8	10,3
active learning practices should be emphasized	E14	7	9
higher order thinking skills (planning, monitoring and evaluating their own learning) bring success in online environments.	E8	7	9
educational applications such as online games and competitions have shown a positive effect in terms of success and satisfaction.	E5	6	7,7
there should be formal educational practices for their digital competencies.	E10	5	6,4
uses the internet mostly to reach information and search for news.	E3	4	5,1
there should be reflective thinking activities.	E9	3	3,8
is interested in student-produced content and learning practices based on these contents.	E12	3	3,8

finds online environments that support inclusive education and multicultural education practices more beneficial.	E1	2	2,5
technology-rich practices such as the flipped classroom and blended learning environments are positive in terms of knowledge and skills building and engagement.	E4	2	2,5
prefers process evaluation	E19	2	2,5
requires critical thinking skills training.	E20	2	2,5
is more distant to group work practices.	E13	2	2,5
prefers instructional designs that are short and effective, as they have short attention spans and are accustomed to acquiring information quickly.	E7	2	2,5
Nomophobia (fear of lack of mobile technology) is high, so there should be necessary educational applications for this.	E11	1	1,2
Digital content for educational purposes should be updated and monitored frequently.	E16	1	1,2
technology-assisted traditional classrooms are more effective than flipped classrooms.	E17	1	1,2
is more willing to share knowledge.	E18	1	1,2
learners have a higher level of digital knowledge	E21	1	1,2
TOTAL	21	77	100%

According to this table, the most common suggestion that emerged in the studies on Gen Z in the field of education was "They want feedback and guidance more frequently and faster than other generations". This is followed by "Gen Z usually prefers visual materials in education processes", “mobile technologies and applications affect the learning process positively”, and “active learning practices should be emphasized.”. Considering these most repeated suggestions, it was seen that these suggestions were mostly related to the learning environment, content and learner role.

In Table 4 research questions two and three are answered. The results of frequency and percentage analysis of the suggestion codes in other social science articles are shown below.

Table 4.

Frequency and Percentage of the Codes for Suggestions in the Other Social Sciences

Codes	**Labels**	**Frequency (f)**	**Percentage (%)**
Other Social Sciences (For) Gen Z…		**n=27**	
prefers trending social media platforms and finds it more motivating.	S1	4	14,8
are less willing to hide their personal information and experiences.	S7	3	11,1
expects emotional support for their problems with family and friends.	S5	3	11,1
finds multicultural work environments more motivating.	S2	3	11,1

interfaces for online media should be easy, simple and flexible.	S9	3	11,1
job-oriented training opportunities are more motivating.	S3	2	7,4
uses social media accounts mostly for self-expression.	S4	2	7,4
expects emotional support for their problems with family and friends.	S5	1	3,7
has a hard time admitting their mistakes in interpersonal communication.	S6	1	3,7
expects their instructors to be more technology proficient than they are.	S8	1	3,7
VR applications have a positive effect on learning.	S10	1	3,7
their digital identities affect their real personalities more than other generations.	S11	1	3,7
if they are wanted to interact, the only way is to persuade them.	S12	1	3,7
gives importance to security and stability in business environment.	S13	1	3,7
TOTAL	13	27	100

The suggestions in this table, on the other hand, stand out with their themes, rather than the order of frequency. While Gen Z finds popular media tools and social media platforms more educationally useful, it is understood that they may need support in terms of protecting their personal information and safe online environment. Another remarkable result is that they expect emotional support for their problems about family and friends.

Educational suggestions that emerged in educational sciences and other social sciences were analyzed in two different groups. However, some codes show similarities between the two groups. The first example of this situation is the suggestions of "Gen Z finds online environments that support inclusive education and multicultural education practices more beneficial." coded with E1 and "They find multicultural work environments more motivating" coded with S2. Although the second suggestion was revealed to include business life and working environment, the frequency of the suggestions and the importance given to multiculturalism or interculturalism seem to be the same. Another example is motivation and its function within the scope of technology. Another theme similarity was Gen Z's perception of speed and the importance given to speed in educational sense.

From this point of view, it is understood that the suggestions obtained and the codes they belong to can be combined under some main themes and the suggestions can be classified in a more concrete and inclusive way. The result of the main theme analysis conducted for this purpose is shown in Table 5.

Table 5.

Thematization of the suggestions

Themes	Sub-themes
Speed	Fast feedback
	Fast interface of online environment
	Mobile learning environment and fast access
	Fast and sectional instructional design
Motivation	Online games and recreational activities
	User friendly and flexible online environment interface
	Personal problems and needs to be heard
	Job oriented educational programs
Content	Prefered visual materials
	Student-produced content
	Educational content about digital competence and security.
	The use of game and gamification elements.
Learning Environment	Updating and tracking digital content
	More technology-proficient teachers
	Multicultural or intercultural learning environment
	reflective thinking activities
Active learning	Practices for gaining autonomy
	Process evaluation practices

The main purpose of creating the main themes was to make the learning preferences and tendencies of Gen Z more understandable in line with the suggestions of scientific studies. During this process, while the items related to interaction could form a main theme, "interaction" was not included in the table as a separate main theme. The reason for this is that almost every item has made a suggestion that can positively affect learner-content, learner-teacher and learner-learner interactions of Gen Z. However, this does not mean that interaction is ignored in this study. On the contrary, it should be remembered that all of the suggestions above are suggestions that will positively affect instructional and curriculum designs aimed at improving the interaction of the Gen Z with the teacher, content and other learners.

Conclusion and Suggestions

Gen Z has the potential to be successful entrepreneurs or innovators of the future. These unique talents of the youth could have economic and social potential only if a modern and inclusive education for the new generation can be provided for them. Designing open and distance learning according to the new generation by taking the above-mentioned suggestions that have been brought together through this study into account, can keep the young generation, who are easily bored and tend to drop out of the system, in the system.

This study shows that schools, universities and even workplaces that use their young learners effectively need to be more innovative. If innovation is a key component of addressing social, environmental and economic challenges, it is thought that the more the youth increase their meaningful participation in their communities, the more successful they will be in addressing these problems. The suggestions that emerged and emphasized in the findings of this study, such as active learning practices, participation of students in

the instructional process, and even having a say in the production of their own learning content, support this argument.

In their study, Shatto and Erwin (2016) made the following suggestions for educators about Gen Z learners:

- Make use of mobile technology and applications as much as possible.
- Give readings that can be done on smartphone and tablet.
- Encourage collaboration using social media sites such as Facebook®, Tumblr, Twitter, blogs and discussion groups.
- Reinforce concepts with YouTube videos.
- Use interactive games like Kahoot® and Socrative®.
- Bring lab skills into classroom.
- Record reporting nurses and have learners practice having reports; at the end of the lesson, have the learners record themselves as they report and have them self-report and reflect on their presentation of the relevant material.
- Limit readings to only essential information.
- Include discussions on inclusion and tolerance; group work should focus on changing perspectives; the use of narrative and storytelling is particularly useful when teaching students from diverse backgrounds.

Most of the above recommendations are also consistent with the findings of this study. The increasing interest of young people in producing content in online environments ("youtubers", "influencers" or "social media phenomenon" can be good examples) can also be used in educational environments. An important feature that should not be forgotten about Gen Z is that they have a very low level of tolerance towards those who have difficulty in understanding the ever-changing infrastructure (Gale, 2015). For this reason, it is necessary for educators to follow this change quickly and update their own competencies and teaching methods.

However, the findings in this study only make sense if we determine how to fully realize the potential that young people have. In other words, the data about speed and motivation revealed in the findings, and the data that although Gen Z is thought to have high level of technological competence, they still need to receive a formal digital competence training underline the need for help and guidance while realizing the potential of the younger generation. This support requires that the feedback and guidance processes needed by the learners be compatible with the speed theme emphasized in this study, and that especially the feedback processes must be fast, effective and encouraging. A more difficult educational decision may be the transition from youth and adult relationships based solely on “guidance, support and resources” to a more democratic, power sharing environment where young people become more autonomous. In business, government and organisations, this change can happen through intergenerational partnerships where young people and adults work together towards a common goal and contributions of the youth are valued. Research explains that when young people with bold ideas are reached and when they work collaboratively in a cross-generational context, it can be a way to effectively address complex social and environmental issues (Ho et al., 2015). In educational institutions, and especially in the context of open and distance learning, these decisions may initially manifest themselves in the production, selection and arrangement of content.

Themes from this study can be used to develop questionnaires in future research contexts. Although generational studies are universal, it is recommended that researchers, administrators and educators working in the field of education make evaluations in their own contexts and compare the characteristics of Gen Z in the examined context to universal findings.

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