

## RESEARCH ARTICLE

## Generation Z Teachers' Reflective Thinking Skills

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**Abstract**

Thousands of teachers join the profession every year and meet a generation that challenges the system. This study aims to examine teachers' reflective thinking skills in the face of Generation Z. A phenomenology design was used in the study, which was designed according to the qualitative model. Semi-structured interview questions were asked to the study group of 22 teachers working in İstanbul. The thematic structure determination form developed within the scope of the research was used as a data collection tool, and the data obtained were subjected to content analysis in the MAXQDA 2022 program. The findings revealed that Generation Z forces teachers to exhibit reflective thinking skills in the classroom and in the teaching-learning process. It is possible to say that the new generation is a driving force for teachers to develop this skill. This situation is thought to be due to "the characteristics of the generation individuals" and "the theoretical education received at the university is weak on teachers' reflective thinking skills in practice". The study's results support the view that today's teachers are students of the new generation. At the end of the research, some suggestions were made.

**Keywords:** Generation Z, reflective thinking, phenomenology

**Öz**

Her yıl binlerce öğretmen mesleğe katılıyor ve sisteme meydan okuyan bir kuşakla tanışıyor. Bu çalışma, Z kuşağı karşısında öğretmenlerin yansıtıcı düşünme becerilerini incelemeyi amaçlamaktadır. Nitel modele göre tasarlanan çalışmada fenomenoloji deseni kullanılmıştır. İstanbul'da görev yapan 22 öğretmenden oluşan çalışma grubuna yarı yapılandırılmış görüşme soruları yöneltilmiştir. Araştırma kapsamında geliştirilen tematik yapı belirleme formu veri toplama aracı olarak kullanılmış, elde edilen veriler MAXQDA 2022 programında içerik analizine tabi tutulmuştur. Bulgular, Z kuşağının öğretmenleri sınıf içinde ve öğretme-öğrenme sürecinde yansıtıcı düşünme becerileri sergilemeye zorladığını ortaya koymuştur. Yeni neslin öğretmenlerin bu beceriyi geliştirmeleri için itici bir güç olduğunu söylemek mümkündür. Bu durumun "kuşak bireylerinin özelliklerinden" ve "üniversitede alınan teorik eğitimin öğretmenlerin uygulamada yansıtıcı düşünme becerileri üzerinde zayıf kalmasından" kaynaklandığı düşünülmektedir. Araştırmanın sonuçları, günümüz öğretmenlerinin yeni neslin öğrencileri olduğu görüşünü desteklemektedir. Araştırma sonunda bazı önerilerde bulunulmuştur.

**Anahtar Kelimeler:** Z kuşağı, yansıtıcı düşünme, fenomenoloji

## Introduction

The fact that the young generation, referred to as digital nomads and “.com”, experiences an “unlimited” virtual world on the internet, reduces their interest in classroom lessons. This situation pushes educators to look for new ways in the face of generation Z. Although the diversification of new teaching methods with the development of technology is thought to facilitate teachers' reflective thinking skills, their job does not seem so easy in the face of a generation that is quite different from its predecessors and pushes the boundaries.

Reflective thinking skill refers to a teacher's self-evaluation and questioning what and how much they have achieved. Generation Z, which makes teachers question their stereotypical habits and traditional practices, necessitates reform in education. This study, aimed to examine teachers' reflective thinking skills in the face of today's students, generation Z, who have such a driving force, and to contribute to the literature. Following the purpose of the study, phenomenology design was preferred and the focus was on the “self”. In this section, generations and their classification and reflective thinking skills are explained in a conceptual framework.

## Generation Concept and Classification

A generation is a group of people born in almost the same years, living in the same time period, and sharing similar problems and fate. Each generation uniquely shares certain experiences and exhibits similar behaviors and characteristics (Yahr & Schimmel, 2013). Similar experiences, values and beliefs shape a generation's view of the world (Pacis et al., 2012). According to İçme, Yıldırım and Büyük (2022), the classification and characteristics of the belts are given in Table 1.

The digital generation, next generation, “generation I”, “.com”, “I gen,” “instant online,” and generation Z, born into technology, is the generation born in 2000 and after. This generation “digital natives” because they access information very quickly, enjoy parallel learning and multitasking, “grasshopper mind” because their attention span is very short, “net generation”

because the internet and technology have a great impact on their cultural development, generation Z, known as the first generation of the 21st century, is described as “a wireless, super-fast and user-controlled world where information is just a few clicks away” (Aydın & Başol, 2014; İçil & Şahin, 2019; McQuin, 2011; Prensky, 2001).

**Table 1. Generations and their characteristics**

Generations	Birth Dates	Characteristics
<b>Silent Generation</b>	1925-1945	Loyal to authority, obedient, disciplined and frugal, working to survive the devastating effects of the World War.
<b>Baby Boom Generation</b>	1946-1964	Those born in these years of population explosion following World War II are hardworking and idealistic.
<b>Generation X</b>	1965-1979	Those born between these years are generally angular in their ideological views, competitive, seeking quick promotion, skeptical and independent.
<b>Generation Y</b>	1980-1999	They are independent, dissatisfied, anti-authoritarian, well educated, adaptable and self-confident.
<b>Generation Z</b>	2000-2020	As a generation born into and addicted to technology, Zs are a generation that values individuality.
<b>Generation Alpha</b>	2021- ...	It is predicted that this generation will prefer machines to humans.

(İçme, Yıldırım & Büyük, 2022)

Known as the first generation of the 21st century, the world of Generation Z is described as “a wireless, super-fast and user-controlled world where information is just a few clicks away” (Aydın & Başol, 2014; McQuin, 2011). Portable and always with them, computers, smartphones, and telephone devices are inseparable parts of this generation. This generation, which lives time fast, exhibits consumer behavior that adopts functional, personalized, smart cell phones, tablets, laptops, portable music players simple and instant consumption products for themselves. (Erten, 2019; İçil & Şahin, 2019; Oral, 2013).

Compared to previous generations, they are no longer called children but “little people”. Professor Jean Twenge (2018) draws attention to this issue. Parents ask children about their preferences even when they are too young to answer. The fact that parents consult their children on even the smallest decisions leads children to believe that their wishes are “the most important”. Generation Z's

resistance to academic risks is expressed by teachers as students being reluctant to participate in class and not raising their fingers to answer questions (McQuenn, 2011). This generation expects to be able to choose what kind of education they receive, where and how they learn. To meet the needs of these students, schools, education managers and teachers have to rethink the way they teach. The new generation of students want to watch more videos in electronically designed classrooms and prefer to learn from their peers rather than from a professor (Halisdemir; 2015). They prefer interactive learning based on course material, search engines, databases, animation and images (Beyers, 2009). According to McQuenn (2011), childhood for generation Z has mostly become an indoor experience. Most of this generation spends very little of their free time outdoors. Many youth have succumbed to binge watching of favorite shows and instructors may not understand or identify how current students can get caught up in, or lost on, the Internet. Excited but fearful about the future, generation Z is less likely to work with others. Educators of such a paradoxical generation have to reconsider and improve their time management and teaching techniques (Mohr & Mohr, 2017).

### Reflective Thinking

Reflection is when pre-service teachers reveal their own thoughts, attitudes and abilities while explaining a topic. Reflective thinking, on the other hand, is a logical and informed decision-making process that involves the evaluation of results in educational issues (Broza et al., 2022; Duban & Yelken, 2010). Dewey introduced the concept of reflective thinking. In his book "How We Think" (1933), Dewey defined reflection as "thinking that requires turning an idea over in the mind and taking it into serious consideration" (as cited in Duban & Yelken, 2010; Thibeault, 2004). Reflective thinking is the process of thinking to solve problems related to an individual's learning or teaching method (Bakioğlu & Dalgıç, 2014). It is often referred to as the ability to "critically look at and pay attention to the practical values and theories that shape daily actions by reflectively and reflexively examining practice" (Aldegether, 2020).

Reflective learning is an effort to make professional life meaningful by evaluating the methods applied, drawing lessons from the results, and developing problem-solving skills (Duban & Yelken, 2010). It provides an active, permanent and careful evaluation of any belief or knowledge regarding the targeted and possible future results (Fryer, 2013; Hasırcı & Sadık, 2011). In short, reflective thinking is a thinking system that enables us to make sense of what and how we do, to determine what went right and what went wrong, and to analyze the cause according to the results and strengthen the system.

The theories of John Dewey and Donald Schön guide educators in reflective thinking, which is based on pragmatic philosophy and is related to the progressivism movement, shows a continuous development and is frequently mentioned in teacher education (Carey, 2017; Egmir & Ocak, 2020; Meral & Semerci, 2009; Russback, 2010). According to philosophers, reflective thinking provides a bridge between practice and theory. It is argued that the professional development of teachers who have the ability to teach but do not have an inquiring mind will be limited (Duban & Yelken, 2010; Thibeault, 2004). According to many studies, when teachers can blend theory and practice in a reflective way, it positively impacts student achievement (Weber, 2013). Teacher education programs should help pre-service teachers reflect on problems of practice (Thibeault, 2004). Research shows that educators' reflective thinking skills improve when they engage in self-criticism (Cicekler & Aral, 2021; Keogh, 2005).

Teachers are always in the process of "becoming". They need to constantly examine and explore who they are and what they stand for (Carey, 2017). Many teachers believe that knowledge is acquired through the "simple transmission of facts" and do not feel the need to explore or question their own practice and autonomy. Teachers with stereotypical beliefs do not review their practice skills concerning how students learn. At this point, reflective teaching improves the teacher's ability to self-analyze (Stewart, 2010). Reflective thinking is a useful skill for retaining teachers because it helps to bridge the gap between theory and practice (Weber, 2013). In order to become reflective thinkers, teachers need

to benefit from two processes. These are reflective thinking and reflective practice. Reflective thinking involves self-awareness and self-evaluation, while reflective practice focuses on changing and improving current teaching practices (Aldegether, 2020).

A reflective teacher can be defined as a critical, questioning person with the goal of making students more critical and responsible citizens (Fryer, 2013). A reflective teacher constantly reviews the teaching process, ensures the effective use of methods and materials, takes his/her responsibilities to heart by being honest and open-minded, is open to criticism, and generates alternative solutions. Cares about students' mental, emotional and physical development. They prepare their students for the outside world and strive to help them see the future. Reflective teachers guide their students to the knowledge they want to acquire and create environments where students can freely share their thoughts. Reflective teachers try to develop reflective thinking skills in their students, supporting their higher-order thinking skills such as analysis, synthesis, and evaluation, contributing to developing the citizens that productive societies aspire to have. Reflective teachers feel responsible for making instructional changes in their lessons so that more students can comprehend the course content (Ersözülü, 2008; Fryer, 2013; Pennington, 2010).

The temporal boundary of Generation Z is between 2000 and 2020 as indicated in Table 1 (İçme, Yıldırım & Büyük, 2022). The statements of Jones, Jo, and Martin (2007), who mention that the timeline of this generation will end between 2020 and 2029 and give way to the next generation, show that Generation Z will continue its education and training life for a long time. Based on the impression and thought that Generation Z, which overturns traditional practices and habits, prompts teachers to think reflectively, this study aims to examine the reflective thinking skills of Generation Z teachers'. Answers were sought to the questions prepared for this purpose. The sub-objectives of the research are as follows:

1. To determine the effect of university education on "reflective thinking" skills.

2. To determine the difficulties encountered in classroom reflective thinking practices against Generation Z.
3. To understand the impact of Generation Z on teachers (searching for a new and different model, self-improvement, etc.).
4. To determine whether any approaches, methods, materials, content, plans, software, etc. are produced by departments or teachers for the new generation.
5. To reveal what has been learned from the digital generation.

## Method

### Research Model

This study, which investigates teachers' reflective thinking skills in the face of Generation Z, was designed with a qualitative model, and phenomenology design was preferred. Phenomenology is an intellectual approach that questions whether what is perceived as real exists and focuses on "essence" instead of assumptions (Raco, 2018; Raco & Tanod, 2014; Qutoshi, 2018). Phenomenology tries to reach universal meaning from individual descriptions based on what is experienced and how it is experienced (Creswell, 2013). This approach is an interpretive methodology that accesses participants' experiences through structured interviews. Participants' perspective and subjectivity are central to phenomenological research (Qutoshi, 2018). The participant's experiences of the phenomenon are evaluated in terms of national or international conditions (Van der Mescht, 2004). In this study, which investigated the reflective thinking skills of teachers in the face of generation Z, it was aimed to get to the "essence" of the subject in line with the participant views.

### Research Group

The group of the study, which was determined according to affinity sampling from purposive sampling method, consists of 22 teachers working in Istanbul. Purposive sampling is the selection of information-rich situations in the context of the purpose of the study in order to conduct in-depth

research. There are six purposive sampling methods: outlier, maximum variation, affinity, typical case, stratified purposive and criterion. Among these, affinity sampling is the creation of the sample from a similar subgroup or situation in the population related to the problem of the research (Büyüköztürk, 2021). Open-ended questions prepared for the purpose of the research were directed to the participants, and the participants were asked to be more descriptive when deemed necessary. In addition, care was taken to show an objective attitude towards each participant. Demographic information of the participants is shown in Table 2.

**Table 2. Demographic information of the participants**

Participant	Branch	Age	Gender	Education Status	Year
T.1	Primary school teacher	44	Woman	Undergraduate	23.
T.2	Physics	39	Woman	Master's degree	13.
T.3	Biology	40	Woman	Undergraduate	16.
T.4	Primary school teacher	45	Woman	Undergraduate	21.
T.5	Primary school teacher	42	Woman	Master's degree	16.
T.6	PCG	35	Woman	Undergraduate	11.
T.7	Primary school teacher	44	Male	Undergraduate	21.
T.8	Geography	41	Woman	Undergraduate	15.
T.9	Philosophy	35	Woman	Master's degree	11.
T.10	Mathematics	28	Woman	Undergraduate	5.
T.11	Primary school teacher	31	Woman	Master's degree	9.
T.12	English	35	Woman	Master's degree	12.
T.13	Food technology	51	Woman	Undergraduate	23.
T.14	Turkish	42	Woman	Undergraduate	17.
T.15	Turkish	33	Woman	Undergraduate	8.
T.16	Mathematics	36	Male	Undergraduate	11.
T.17	History	43	Male	Undergraduate	14.
T.18	Construction technology and building design	42	Male	Master's degree	13.
T.19	English	40	Woman	Master's degree	16.
T.20	PCG	41	Woman	Undergraduate	19.
T.21	PCG	31	Woman	Undergraduate	8.
T.22	English	30	Woman	Master's degree	10.

As seen in Table 2, the age range of the participants, consisting of 18 female and 4 male teachers, varied between 28-51. Of the 22

participant teachers whose branches and seniority varied, 14 were undergraduate and 8 of them have master's degree.

Qualitative techniques allow researchers to share in other people's understandings and perceptions and to explore how people structure and give meaning to their daily lives. The more in-depth the knowledge about a group, the better the uniqueness of that group is understood. However, qualitative research cannot be easily generalized to a large population (Berg & Lune, 2019). In this context, in the findings and conclusions section, the age, gender and educational status of the participants were avoided to be interpreted as distinguishing characteristics.

### Data Collection Tool

Research data were collected by preparing a semi-structured interview form consisting of five questions. A thematic structure determination form developed in accordance with the scope was used. The questions were developed after reviewing the relevant literature. After receiving the opinions of two field experts, the questions were directed to three participants and a pilot study was conducted. Statements that were not clearly understood in the questions were changed; for example, the fifth question was revised to be better understood by the participants. After the necessary corrections were made, expert opinions were consulted again and the interview form was finalized. The semi-structured interview questions directed to the participants are as follows:

1. Did the education you received at university have an impact on your "reflective thinking" skills? Explain and evaluate whether it has improved you or not.
2. What are the difficulties you face in reflective thinking practices against generation Z in the classroom? Explain.
3. Does generation Z have an impact on your reflective thinking skills? Do you see your students as a driving force for you to seek a new and different model and to improve yourself? Explain.
4. Explain whether you have produced approaches, methods, materials, content,

plans, software, etc. for the new generation as a group or individually and whether you have participated in trainings in these areas. If yes, which trainings did you attend?

5. Have you learned anything from generation Z? What are they? In which direction did this generation develop you? Explain.

### Data Collection Process

In order to reach the qualitative data of the study, the participants were briefly informed about the study. Based on the principle of volunteerism, data were collected through face-to-face interviews. Before this process started, an application was made to the Istanbul Commerce University Rectorate Publication Ethics Committee for the ethical evaluation of the study and the ethics committee certificate (decision dated 14.09.2022 and numbered E-65836846-044-261818) was obtained. In the interviews with 22 teachers working in Istanbul, each participant was allocated approximately half an hour. After obtaining the permission of the participants, their answers were audio-recorded. Efforts were made to get more opinions from the participants in order to analyze the subject in depth. Care was taken to show the same attitude towards each of the teachers participating in the interview, they were interviewed within the framework of ethical rules and their identities were kept confidential. With the permission of the participants, the interviews were audio-recorded and these recordings were converted into a written text to be analyzed by the researcher.

### Data Analysis

The data subjected to content analysis were analyzed in MAXQDA 2022 qualitative data analysis program. The MAXQDA program is a program that facilitates the systematic analysis and interpretation of the texts of qualitative research (Çayır & Sarıtaş, 2017). On the program, data are analyzed by dividing them into themes, categories and codes. It is possible to use the same data in more than one code or theme (Merriam, 2013). MAXQDA, a program that increases reliability,

also designs the visualization of data (Tekeli & Tekeli, 2021). In this study, in order to strengthen reliability, stability among coders was ensured by consulting the experts of the program.

One of the most important criteria of a scientific study is the credibility of the results. In this context, the competence of the researcher and the accuracy of the results come to the fore (Başkale, 2016). The researcher's inferences depend on considering all kinds of possibilities, and at the same time, observations and observations should coincide with the facts (Merriam, 2013; Özden & Durdu, 2016). In this study, the researcher tried to interpret the data in a verifiable way and reflect the reality. In qualitative research, the concept of validity is more evident than reliability. Validity is divided into three categories: internal and external validity and relationship validity (Yağar & Dökme, 2018). In order to strengthen internal validity, the researcher tried to give the realism of the purpose and participants in an understandable way. "Transferability" was ensured to strengthen external validity. This research took into account the questions "how credible are the results?" and "do they overlap with similar studies?". Relational validity was also considered in order to provide readers with a meaningful and useful study.

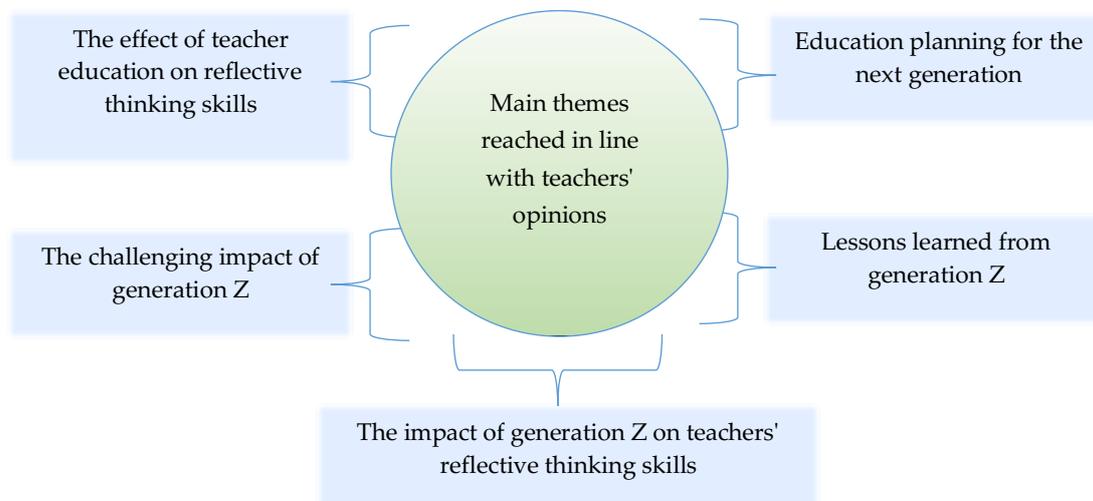
The findings obtained as a result of data analysis are presented in tables including themes, sub-themes, codes and frequency of citation. The number of references to a code may be more than one. In this case, the frequency value in the table also increases. Below the tables, participant views on the codes are given. The coding for each teacher was indicated as T1, T2, T3.....T22 by using letters and numbers identifying the participants. Adhering to the purpose of the study, the reflective thinking skills of teachers in the face of generation Z were revealed thematically. Through the experiences and opinions of the participants, it was tried to focus on the "essence" and the following findings were reached.

### Findings

The data collected in this study, which was conducted to reveal teachers' reflective thinking skills in the face of generation Z, were analyzed and the following findings were obtained. The

main themes where teachers' views were collected are shown in Figure 1.

"university education does not support reflective thinking skills" (f=12).



**Figure 1.** Main Themes Reached Based on Teachers' Opinions

The codes belonging to each theme and the frequency of mentioning the codes are given in tables below.

**The Effect of Teacher Education on Reflective Thinking Skills**

The first sub-objective of the study aimed to determine the effect of university education on teachers' reflective thinking skills. The codes showing the effect of teacher education on reflective thinking skills and the frequency of the codes (citations) are given in Table 3.

*Table 3. The effect of teacher education on reflective thinking skills*

The effect of teacher education on reflective thinking	f
1. University education supports reflective thinking skills	T.1, T.3, T.5, T.8, T.9, T.10, T.11, T.13, T.17, T.18, T.19, T.20, T.22
2. University education does not support reflective thinking skills	T.2, T.4, T.6, T.7, T.12, T.13, T.14, T.15, T.16, T.17, T.19, T.21
2.1. Personal skills and experience have an impact	

According to Table 3, the codes of the theme showing the effect of teacher education at university on reflective thinking express two different opinions as "university education supports reflective thinking skills" (f=13) and

The opinions of those who stated that university education does not support teachers' reflective thinking skills are united at the point that "it is acquired through personal skills and experience". Some participants made references to both supporting and not supporting.

The sentences quoted by two of the participants who were of the opinion that "University education supports reflective thinking skills" are as follows:

*"...I have the chance to apply what I have learned in classroom management, learning psychology and material development courses at the university on students in the classroom. At the same time, the more time I spend with students, the more I learn about their interests, learning styles and needs. This is reflected in my teaching..." (T.8)*

*"...For example, the practical parts of the courses I took or the courses on material development supported creative thinking in various fields in our professional life..." (T.3)*

The sentences quoted by two of the participants who were of the opinion that "University education does not support reflective thinking skills" and who mentioned "acquired through personal skills and experience" as a sub-code are as follows:

*"...The theoretical knowledge at the university remained in the memory for a short time because it was exam-*

oriented. Unfortunately, when we graduate and start teaching, that theoretical knowledge is not remembered and cannot be applied reflectively in the situations encountered..." (T.10)

"...The concept of reflective thinking was not such a prominent and important concept at the time of my education. However, we have included this concept in our education by interpreting what we have acquired from our own point of view..." (T.6)

### The Challenging Impact of Generation Z

The second sub-objective of the study aimed to determine the difficulties encountered in reflective thinking practices against Generation Z in the classroom. The codes showing the challenging effect of Generation Z and the frequency of codes are given in Table 4.

**Table 4. The challenging impact of Generation Z**

The challenging impact of Generation Z	f
1. Technology addiction	T.1, T.2, T.3, T.5, T.6, T.7, T.8, T.9, T.11, T.12, T.13, T.14, T.15, T.17, T.18, T.19, T.20, T.22
2. Distraction	T.1, T.2, T.3, T.5, T.6, T.7, T.8, T.9, T.12, T.13, T.14, T.15, T.17, T.18, T.19, T.20
3. Generational conflict	T.3, T.5, T.6, T.7, T.8, T.9, T.11, T.12, T.13, T.14, T.15, T.17, T.18
4. Discipline problem	T.2, T.3, T.4, T.5, T.13, T.14, T.14, T.15, T.17, T.21
5. Difficulty following instructions	T.3, T.5, T.7, T.8, T.9, T.11, T.12, T.17
6. Ease of access to information	T.2, T.9, T.11, T.12, T.15, T.18, T.19

In Table 4, the codes of the theme showing the challenging effect of generation Z are "technology addiction" (f=19), "distraction" (f=17), "generational conflict"(f=13), "discipline problem" (f=10), "difficulty in following instructions"(f=8) and "ease of access to information"(f=7).

One of the participant views on the "technology addiction" is as follows:

"...I am currently teaching the first grade, and I see problems with writing. I observed that most of them have underdeveloped fine motor skills because they are too intertwined with technology. In other words, they are at a level below their age group..." (T.12)

The views of one of the participants regarding the "distraction" code are as follows:

"...Our biggest problem with this generation is distraction and learning disorders. Students can't focus on a subject for long periods of time and get distracted very quickly. Even the slightest interaction causes them to get distracted from the lesson. Of course, the source of this is both the internet and the distracting features of the external environment. I have the most difficulty with this issue..." (T.9)

One of the participant views emphasizing "generational conflict" is as follows:

"...We are individuals who are a bit more sociable, who try to live human relations in a real sense, who don't want to get carried away with individualism. We find it difficult to explain our social values to the new generation..." (T.8)

Some of the participant views on the "discipline problem" are as follows:

"...Parents from the previous generation grew up under pressure and rules. In order not to bring up their own children under the same pressure, they let them go too far..." (T.4)

"...The digital generation is a generation that doesn't like to be criticized, a generation with a high ego, actually an intelligent generation, but a generation that associates its intelligence with impudence..." (T.5)

The opinion of one of the participants who emphasized the "difficulty in following the instructions" is as follows:

"...This generation has serious problems with obeying rules, recognizing boundaries, I think they have difficulty perceiving verbal expressions and instructions..." (T.3)

The opinion of one of the participants on "ease of access to information" is as follows:

"...Since they can access information very quickly, they do not look for ways to learn in any way. They want to be completely ready for everything, they don't want to do homework, they don't want to repeat after the lesson. Therefore, their learning journey is somehow interrupted and everything starts all over again..." (T.2)

### The Effect of Generation Z on Teachers' Reflective Thinking Skills

In the third sub-objective of the study, the effect of generation Z on teachers' reflective thinking skills (searching for a new and different model, self-improvement, etc.) was aimed to be revealed. The codes showing the effect of generation Z on teachers' reflective thinking skills and the frequency of codes are given in Table 5.

**Table 5. The effect of generation Z on teachers' reflective thinking skills**

The effect of generation Z on teachers' reflective thinking skills	f
1. Using technology	T.1, T.2, T.3, T.4, T.5, T.6, T.7, T.8, T.9, T.10, T.11, T.12 T.13, T.14, T.15, T.17, T.18, T.19, T.20, T.21, T.22
2. Enriching the course content	T.1, T.2, T.3, T.5, T.6, T.8, T.9, T.10, T.11, T.12 T.13, T.14, T.18, T.19, T.20, T.22
3. Being a guide/mentor	T.1, T.6, T.7, T.8, T.9, T.10, T.11, T.12, T.13, T.14, T.15, T.20
4. Empathize	T.2, T.9, T.10, T.14, T.18, T.20

According to Table 5, the codes of the theme showing the effect of generation Z on teachers' reflective thinking skills are "using technology" (f=21), "enriching the course content" (f=16), "being a guide/mentor" (f=12) and "empathizing" (f=6).

One of the participant views on "using technology" is as follows:

*"...I am trying to train myself in using the digital environment, computer and internet and adapting them to the teaching environment...I think that technological content, short and visual-based studies appeal more to this generation..." (T.3)*

One of the participant views on "enriching the course content" is as follows:

*"...I changed my in-class programs and now I involve more students in the lesson. I make new weekly programs. I teach mathematics with games. For example, I make students solve problems by playing games. For example, the subject of fractions always seems abstract to students and is one of the most difficult subjects to learn, but when we look at it in daily life,*

*even when we make a cake, we fill three quarters of a glass with an ingredient and all recipes are explained in this way. So I used this in class, I had them make a cake and they liked it very much. They both saw how they could use fractions in daily life and their interest in the lesson increased more..." (T.10)*

One of the participant views on the code "being a guide/mentor" is as follows:

*"...There is a great need for individual and in-class activities of guidance services and family trainings. Studies are being carried out for this. However, a central program should be established and disseminated in schools to overcome the negativities created by the digital age..." (T.20)*

The opinion of one of the participants regarding the "empathizing" code is as follows:

*"...You have to look like one of the students, you have to show that you can think like them. At this point, there was a change in the perception of role model. If it were me, I organize the lesson according to "what kind of teacher I would want, how I would want the lesson to be taught"..." (T.9)*

### Education Planning for the Next Generation

The fourth sub-objective of the research aimed to determine whether there were any approaches, methods, materials, content, plans, software, etc. produced by the departments or teachers for the new generation. The codes indicating educational planning for the new generation and the frequency of codes are shown in Table 6.

**Table 6. Education planning for the next generation**

Education planning for the next generation	f
1. Enriching course content	T.2, T.3, T.4, T.5, T.8, T.9, T.10, T.11, T.12, T.13, T.14, T.15, T.17, T.18, T.19, T.20, T.21, T.22
2. Increasing the use of digital materials	T.1, T.5, T.6, T.7, T.8, T.9, T.10, T.11, T.12, T.13, T.14, T.15, T.17, T.18, T.19, T.20, T.21
3. Preparing social environments	T.3, T.4, T.6, T.7, T.10, T.11, T.13, T.14, T.15, T.17, T.18, T.20
4. Producing projects	T.1, T.7, T.8, T.9, T.10, T.11, T.12 T.13, T.14, T.15, T.17
5. Interdisciplinary work	T.5, T.7, T.8, T.9, T.10, T.18, T.19

According to Table 6, the codes of the theme indicating educational planning for the new generation are “enriching course content” (f=18), “increasing the use of digital materials” (f=17), “preparing social environments” (f=12), “producing projects” (f=11) and “interdisciplinary work” (f=7).

One of the participant views on “enriching course content” is as follows:

*“...We are developing new methods, we are trying to establish a thematic yearly planning by working across departments. While planning this theme, we create a story, and the hero or event of that story is included in all lessons throughout the theme. For example, “Ali is the postman. He brought the A sound of the tree in the Turkish lesson, and he collected apples from the tree in the math lesson” with stories like these, we try to carry out all lessons in this way at school...” (T.4)*

One of the participant views emphasizing “increasing the use of digital materials” is as follows:

*“...We talk about the need to train ourselves to use digital objects more and more effectively in education and training, and we participate in in-service trainings, courses and events in this direction...” (T.13)*

One of the participant views on “preparing social environments” is as follows:

*“...Learning together with our students ensures that the information is permanent and a product of experience. We also plan to be involved in social life. For example, there are studies we have done and will do with nursing homes and child care centers...” (T.17)*

One of the participant views on “producing projects” is as follows:

*“...Our approach focused on ensuring that each student can produce projects and experience the process of accessing knowledge. We developed a plan-program intertwined with museums, libraries and universities. In this process, we discuss films, documentaries, books in our philosophy club and workshops...” (T.9)*

One of the participant views on “interdisciplinary work” is as follows:

*“...We prepare course materials together with other departments I interact with. For example, we prepared a lesson material with the English teacher and our topic was fractions. We ordered pizzas, and the pizzas were all materials expressing fractions. Our English teacher had the children explain the preparation of the pizza in English, and then I explained the fractions using the pizzas. This is an example of interdisciplinary interaction. The fact that the teachers shared with each other also affected the children. At the same time, it is important for students not to think of a lesson in isolation, but to see that the information they learn in all lessons is a whole...” (T.10)*

### Lessons Learned from Generation Z

In the fifth sub-objective of the research, it was aimed to reveal what was learned from the digital generation. The codes and the frequency of codes indicating what generation Z has taught and at the same time suggestions for the future are given in Table 7.

**Table 7. Lessons learned from Generation Z**

Lessons learned from Generation Z	f
1. Update teacher education and pedagogical knowledge	T.2, T.3, T.4, T.5, T.6, T.7, T.9, T.10, T.13, T.14, T.15, T.16, T.17, T.18, T.20, T.21, T.22
2. Simplification of the curriculum	T.5, T.6, T.7, T.8, T.9, T.10, T.11, T.12, T.13, T.14, T.15, T.17, T.18, T.19, T.20
3. Using educational technologies effectively	T.3, T.4, T.5, T.6, T.7, T.8, T.11, T.12, T.13, T.14, T.15, T.17, T.18, T.22
4. Teaching to learn	T.1, T.2, T.6, T.7, T.8, T.11, T.12, T.13, T.14, T.15
5. Providing values education	T.9, T.12, T.13, T.14, T.15, T.17, T.19, T.20, T.21, T.22
6. Explaining the necessity of rules	T.5, T.6, T.9, T.14, T.15, T.17, T.18

The codes of Table 7 are given under the titles “updating teacher education and pedagogical knowledge” (f=18), “Simplification of the curriculum” (f=15), “using educational technologies effectively” (f=14), “teaching to learn” (f=10), “providing values education” (f=9), “explaining the necessity of rules” (f=7).

One of the participant views emphasizing the need to “update teacher education and pedagogical knowledge” is as follows:

*“...Teacher education in universities should not be the same as it used to be. It should be about teaching*

teachers how to use new applications, how to concentrate in the classroom, how to involve the new generation of students in the lesson. There are a lot of conferences, training seminars, etc. in Turkey, but on the other hand, these trainings are very expensive, not everyone can afford them. That's why universities should include these conferences, these systems, this process in their curricula, it shouldn't turn into a rent-seeking scheme..." (T.10)

The views of one of the participants who expressed an opinion about "Simplification of the curriculum" are as follows:

"...It is definitely necessary to lighten the curriculum. There are too many subjects piling up, when we look at the attention span of these children, trying to keep up with the subjects means losing the child..." (T.17)

The views of one of the participants on the need to "use educational technologies effectively" are as follows:

"...Flipclassroom studies are an application I enjoy. It is a nice new practice to give them a study or monitoring file outside and analyze them at school..." (T.22)

One participant stated that it is necessary to "teaching to learn" as follows:

"...Dirty information that spreads fast in the digital environment can conflict with what the teacher teaches. Students don't want to think about project or research-based assignments, they find ready-made examples on the internet and copy them. This prevents producing the new. The most important issue here is to gain research skills..." (T.13)

One participant stated that it is necessary to "provide values education" as follows:

"...A careless youth is growing up about homeland, nation and many ethical values. Teachers should definitely see this and measures should be taken at this point..." (T.9)

One participant stated that it is necessary to "explain the necessity of rules" as follows:

"...You cannot easily get this generation to accept a rule. When I set a rule, I first have to explain the logical

reasons for it so that they accept it. We are facing a generation that is questioning and fond of their freedom. Our generation was not given any explanation for any rule and we never questioned it, but it was not our fault either, that time and that system was far from questioning..." (T.5)

The teacher statements given above, on the one hand, contain what the new generation has taught the previous generation, and on the other hand, they give suggestions and shed light on the future.

## Discussion and Conclusion

As a result of this study investigating the reflective thinking skills of Generation Z teachers, it was revealed that Generation Z forces teachers to develop their reflective thinking skills in the classroom and in the teaching-learning process. It is possible to say that the new generation is a driving force for teachers to develop this skill. Among the reasons for this situation are the typical characteristics of Generation Z, which is free on the internet (Erten, 2019), resistance to the rules in the classroom, isolation in the digital environment, distraction triggered by virtual gaming habits, impatient behavior due to the desire to get fast feedback, lack of concentration due to the abundance of opportunities, and their disregard for the concept of authority compared to other generations (Ardıç & Altun, 2017). Teachers are forced to throw out their outdated beliefs and actions and reconsider their own practices regarding what they do and how they do it. In this context, generation Z also has an effective force in developing teachers' self-criticism. According to McQuenn (2011) and Şahin (2005), frequent exposure to technology and media at such an early age directly affects generation Z's school life and their relationship with teachers. The new generation has different expectations from life. Generation Z, which has different social characteristics and can develop different ways of thinking and learning, prefers an approach that uses communication technologies, can show multitasking skills, is prone to active role, cares about peer learning, is student-centered and individual differences are taken into consideration (Beyers, 2009; Çetin & Halisdemir, 2019; Jones & Shao 2011). In this context, in order for teachers to

acquire reflective thinking skills, the characteristics of generational individuals should be explained on sociological grounds in faculties of education. As Pacis et al. (2012) argue, each generation's educational process and learning strategies are different. Research on the relationship between generational differences and learning styles suggests that educational methods should be diversified because different generations prefer different learning styles. (Erden, 2019). Emphasizing that each generation has its own values, ideas, ethics, beliefs and therefore learning styles, Johson & Romanello (2005) describes the characteristics of generations and learning styles and suggests using generational diversity as a teaching tool in the classroom. Pre-service teachers should envision the audience they will meet in schools, research ways of addressing the new generation, and be aware of technological developments and current virtual issues. This information will facilitate the reflective thinking of the beginning teacher.

Another reason teachers have difficulty demonstrating reflective thinking skills in the face of the new generation is that "the education received at the university is weak in supporting reflective thinking skills." When the research findings are examined, the number of citations of those who find the faculty education sufficient and those who find it insufficient is relatively high. Therefore, it is concluded that the theoretical education received at the university is weak in developing teachers' reflective thinking skills in practice. As Saraçoğlu (2022) points out, education faculties aim to enable prospective teachers to create behavioral change in their students. In this context, prospective teachers must receive practical training to develop reflective thinking and inquiry skills. Reflective thinking education provided through practice will facilitate the adaptation of pre-service teachers to professional life. According to Fryer (2013), including various reflective learning activities in teacher education programs promotes deeper learning and provides a framework for teachers who aim to become lifelong learners. According to Stewart (2010) and Weber (2013), teacher preparation programs should be examined to see whether they provide higher level thinking skills for students, and

attention should be paid to the way pre-service teachers use reflection to translate their theoretical knowledge into professional teaching practice.

Generation Z is shaking the world of education. According to the study's findings, teachers, who address a challenging generation, have learned from the new generation in this process and have maintained their status as learners and teachers. It has been revealed that teachers who keep their lessons up to date by following the topics that are of interest to generation Z, share on digital platforms, participate in trainings on educational technologies, revise their lesson plans and prepare enjoyable course content for students with the "gamification" method have adopted the motto of "lifelong learning". The findings support the view that teachers of this period are students of the new generation. Notably, teachers gained gains in addressing the cognitive and emotional needs of generation Z and improved their ability to "mentor" the new generation. In many studies, it is emphasized that teacher mentoring has the potential to affect student learning positively, and it is stated that the mentoring process enables teachers and students to develop two-way trust and strengthen their belief in teaching (Çiğdemoğlu et al., 2019; Jiang et al., 2021). In addition to the above results, it is noteworthy that the study's findings indicate that teachers try to "explain the necessity of rules" to generation Z and consider this as a feature that they see as different from their own period. This is because generation Z demands that they should be consulted about common rules and be fair in practice (Çetin & Halisdemir, 2019).

Reflective thinking skill effectively improves learning success (Chamdani et al., 2022). Akpur (2020) found that critical, reflective, and creative thinking have a positive and significant relationship with each other, and each has a positive and significant predictive power on academic achievement. Similarly, Saraçoğlu (2022) emphasized that reflective thinking positively and significantly affects inquiry skills and that reflective thinking positively and significantly predicts mathematics teaching self-efficacy belief. Therefore, 21st-century teachers who face the challenges of the age should focus on critical and creative thinking techniques to nurture reflective

thinking skills. Steps should be taken to use these higher-order thinking skills together. Aldegether (2020) found the relationship between self-belief and teaching awareness and reflective thinking to be statistically significant. He found that both self-belief and teaching awareness were predictors of reflective thinking among teachers.

Effective teaching requires ongoing mastery through reflection. More learning comes from reflecting on an experience than from the experience itself. Reflective teachers are expert teachers. Good teachers have subject knowledge, time management, a repertoire of teaching methods, and knowledge of educational theories. However, expert teachers, besides these characteristics, are willing to reflect on the impact and consequences of their decisions and actions (Carey, 2017). By activating reflective thinking, pre-service and new teachers can make sense of their teaching and learning actions (Russback, 2010). Being a critical and reflective teacher means engaging in the higher-order cognitive process of investigating an event or issue, reviewing possibilities, and choosing the best solution for that event or issue. When pre-service teachers become more reflective in their practice, they can better cope with the various challenges that occur in the classroom (Weber, 2013).

One of the sub-objectives of the study was to receive suggestions from teachers for the future. Both the teachers' suggestions and the study results bring the following recommendations.

- Based on this study, generations and especially the characteristics of the new generation can be taught sociologically in teacher trainings at universities.
- Activities, projects and applied training programs can be prepared to develop reflective thinking skills of prospective teachers.
- At the stage of putting theoretical knowledge into practice, experienced teachers can be supported to be effective mentors to pre-service teachers during the internship period, and the effect of a short internship period on the pre-service teacher can be measured effectively by evaluating the "to what extent". The process of mentoring pre-service teachers

can be continued by developing various projects.

- Reflective thinking knowledge can be updated through in-service trainings.

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