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OPINIONS AND SELF-ASSESSMENTS OF TEACHERS IN NORTHERN CYPRUS TOWARD BECOMING TECHNOLOGICALLY LITERATE

Research article

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Abstract

Communication in modern societies serves as a significant tool for the exchange of information and conveying ideas among individuals. Advancing technology and digital platforms have accelerated and facilitated the processes of communication and accessing information. These changes have had a wide-ranging impact, from individuals' personal relationships to societal interactions. Therefore, understanding and analyzing these transformations in accessing information are essential prerequisites for comprehending the social and cultural dynamics of contemporary societies. Utilizing technology appropriately and effectively within education has become a crucial characteristic, especially for educators. This research focuses on the views and self-assessments of teachers regarding becoming technologically literate. The study was designed as qualitative interviews with the participation of 30 teachers working in Northern Cyprus. Based on the research findings, four themes were derived to address sub-problems. The majority of teachers considered themselves technologically literate, yet it was observed that current technologies are not sufficiently integrated and widespread in educational environments.

Keywords: educational technologies, technological literacy, teacher education, information technology

1. Introduction

Learning is a process that occurs when the teacher and the student share a common experience. Learning occurs when students collect and process information (and, as a result, form new knowledge, attitudes, or change their behavior). A popular philosophy of teaching and learning suggests: “The teacher does not teach; the student constructs it.” Technology plays an important role in changing the educational environment by serving as a resource to the student as an aggregator of information, promoting the teacher's role in educational discovery. In other words, the effective teacher serves “not as the sage on the stage but rather as a guide” (Tomei, 2005:4).

Barriers to learning that once prevented students from fully participating in the educational experience are gradually being erased by the integration of technology. The question “what do we teach” now includes technologies that help students with special needs experience opportunities hitherto unavailable in traditional classrooms. Computers and other technologies are powerful tools that support students' needs. Auditory output devices, print enlargement equipment, graphic editing

software, and voice recognition systems for students with special needs and visual and auditory disabilities all provide equal opportunities for students with disabilities to fully participate in the teaching-learning process (Lengyel, 2003). Educators use technology to enhance individual learning and disseminate knowledge within society. They expect technology to blend with their individual approach to teaching. The vast majority are not fully aware of the potential applications of technology in the classroom or corporate training room, or how these technologies can reduce (or perhaps eliminate altogether) the various barriers to learning from a rapidly expanding, highly heterogeneous student body.

The impact of technology in all areas of life is also actively reflected in education. It is more important than ever that teachers learn to care about how educational technologies affect teaching and learning in school and understand that this involves much more than technical skills. From this perspective, teachers' command of technologies, their integration of educational technologies into their lessons, their ability to follow current technologies, and their ability to identify and respond to the needs of their students have become a matter of curiosity. This constitutes the general purpose of the research. In line with the purpose of the research, the main problem of the research for teachers working in private and public schools in the Turkish Republic of Northern Cyprus was determined as follows: "What are the opinions and self-evaluations of teachers working in secondary schools in Northern Cyprus about being technologically literate?" Within the scope of this main problem, the sub-problems of the research were determined. Sub-problems of the research;

• Do teachers define themselves as technologically literate?

• What are teachers' views on the use of technologies in education and its impact on student success?

• What are teachers' opinions about their use of social media in education?

• What are teachers' views on the areas of use and purposes of artificial intelligence technologies?

• What do teachers think about getting to know current technologies and virtual reality applications and integrating them into education?

• How do teachers self-evaluate their technology literacy?

1.1. Technology Literacy

Continuing advances in educational technologies are increasing the demand on teachers, who must decide on the curriculum and determine how, when, and where technologies will be used in the classroom. It is claimed that there is a clear need for a teacher-specific version of technology literacy developed by the International Technology Education Association (ITEA) (Hasse, 2017). Luppicini views educational technologies as a goal-oriented problem-solving system approach that utilizes tools, techniques, theories, and methods from various fields of knowledge to design, develop, and evaluate efficiently and effectively in order to facilitate and strengthen human and mechanical resources. It addresses all aspects of learning to contribute to affecting change in society and guides change agency and the transformation of educational systems and practices (Luppicini, 2005, p. 107).

Technology literacy has become an important skill in today's rapidly changing and developing technological world. Individuals must possess in-depth knowledge of this field to understand how technology evolves, its complexity, and how it affects society. Technology-literate individuals adopt a conscious and objective attitude towards technology; they approach it with understanding, not fear, and avoid becoming addicted. In this sense, when a person receives technology-related information in the news or media, they must have the ability to evaluate this information intelligently. Technology-literate people can come to logical conclusions by questioning, researching, and analyzing the information presented in the news. This skill improves a person's ability to think in an informed and sound manner and allows them to make more informed decisions in their daily lives (ITEA, 2007).

Technology literacy is of great importance not only for individuals but also for institutions and societies. In the business world, when managers, employees, and investors master technology, they can manage business processes more efficiently. Journalists, teachers, and healthcare professionals can reach larger audiences and provide services by using technology effectively. Additionally, technological literacy enables individuals to participate more consciously and effectively in political, social, and economic issues. Individuals who master technology in society can participate more actively in decision-making processes and better shape future developments (ITEA, 2007).

Technology and learning are two crucial elements that contribute to enhancing human life's effectiveness. Both serve as tools individuals utilize to navigate their social and natural environments more efficiently. Education plays a pivotal role in uncovering talents and potentials within individuals, fostering their development into strong, mature, constructive, and creative beings (Alkan, 1984). While the purpose of education and training has remained consistent before and after the industrial revolution, as well as in modern times, the tools, materials, and methods employed in the educational process have evolved over time (Elitaş, 2018). Technology, on the other hand, aids in utilizing the knowledge and skills acquired through education more effectively and efficiently, facilitating the conscious and regular application of these competencies. Consequently, technology and education contribute to individuals' self-improvement, cultural and personal development, effectiveness in their environment and society, and become indispensable (Alkan, 1984).

Technology literacy encompasses awareness of existing technologies that impact every facet of daily life. Moreover, understanding basic concepts and terms related to engineering forms a part of this literacy. Recognizing how specific technologies have shaped history and the reciprocal influence of people on technology constitutes another vital dimension of technology literacy. Additionally, comprehending all foreseeable and necessary risks associated with technology empowers informed decision-making. Furthermore, evaluating the work involved, costs, benefits, and technological development balance is integral to technology literacy. Finally, grasping the societal values and culture reflected by technology plays a crucial role in assessing its social impacts (Pearson, 2006).

Technology literacy entails individuals questioning the risks and benefits of technology for themselves and their environment. Equally significant is the ability to conduct research on emerging technologies, aiding in understanding potential impacts and making informed decisions. Ultimately, active participation and effective contribution to decision-making processes regarding technology use and development are crucial components of technology literacy (Odabaşı, 2000).

Practical skills, such as effectively using various devices in both home and work environments, and troubleshooting minor technical issues encountered, are essential aspects of technology literacy. Furthermore, quantifying probabilities, and assessing and predicting technological risks and benefits in connection with basic mathematical concepts, contribute to technology literacy. At the knowledge level, technologically literate individuals can understand and evaluate the intricate relationships between technology and individuals, society, and the environment (Pearson, 2002).

1.2. Use of Technology in Education

The latest research on today's students' technology usage preferences and its impact on their learning processes reveals that the utilization of modern technological equipment and tools enhances students' learning and engagement (Oğuz and Hark Söylemez, 2023). Technology-supported learning is perceived by students as more interactive and engaging, facilitating effective and practical knowledge transfer. Particularly in the educational realm, modern technology streamlines learning processes by expediting cognitive functions.

In today's educational landscape, reliance on technology is unavoidable, evident across schools, universities, and colleges. Students derive various benefits from technology, such as internet connectivity, making it an indispensable educational tool. Despite potential risks, the internet serves as a crucial educational resource, offering easy access to diverse learning materials and assistance. The widespread availability of internet access across devices contributes to students' academic development by facilitating seamless access to learning resources (Raja and Nagasubramani, 2018).

Research indicates that the educational use of technology primarily focuses on two main contexts: (i) classroom utilization in schools and (ii) students' personal use at home. These contexts differ significantly regarding who controls technology investment decisions and its usage. National education policies and schools typically determine the level of technology investment and guide its integration into classrooms. Conversely, parents and students often make decisions regarding investments in computers, the internet, software, and other technologies for home use (Bulman and Fairlie, 2016).

The incorporation of projectors and visual aids in educational settings captures students' attention and enhances their comprehension skills. Educational institutions worldwide are integrating PowerPoint presentations and projections to foster interactive and engaging learning experiences. Visual stimuli serve as effective tools to engage students' attention and promote critical thinking, thereby enhancing learning efficiency. The integration of digital media into the education sector has revolutionized learning methodologies, granting students access to educational resources and collaboration platforms round the clock. With the continued expansion of digital capabilities, it is anticipated that students' access to supportive applications for development and learning will increase, ensuring the continuity of these advancements (Raja and Nagasubramani, 2018).

Online education has witnessed widespread popularity through various applications and internet platforms offering flexible learning opportunities. This trend is expected to persist, especially among working professionals seeking flexible learning avenues. In summary, modern technology plays a pivotal role in shaping contemporary education, offering enhanced learning experiences and flexibility through internet connectivity, multimedia tools, and online learning platforms.

1.3. Current Technologies, Augmented Reality and Artificial Intelligence

Education faces a delicate balance between maintaining continuity by imparting established knowledge and fostering creativity and change by guiding students into uncharted territory. While teachers play a crucial role, the human element is limited in the educational process, necessitating robust interventions in knowledge transfer, transformation, and result verification. This study explores the potential and role of technology in enhancing the effectiveness and efficiency of this human endeavor, examining how the fundamental tension in education manifests within the classroom and beyond. As schools undergo fundamental logistical changes, technology is often integrated to support this evolving process. However, despite questions about the relevance of the learning process to real life, substantial and widespread changes occur infrequently.

The issue is not whether education should be "technological" or not, but rather how to leverage technology's power to address the challenges of the 21st century and make education relevant, responsive, and effective for all, everywhere, and at all times. Technologies hold significant potential for disseminating knowledge, facilitating effective learning, and delivering educational services efficiently. However, if educational policy strategies are not aligned, and the prerequisites for utilizing these technologies cannot be met simultaneously, this potential will remain unrealized (Haddad and Draxler, 2002).

Today, educational technologies appeal to the five senses, offering opportunities for new experiences and enhancing curriculum learning. Visual and auditory technologies, in particular, capture students' interest in the subject matter. While the internet plays a significant role in this process, educational materials are also adapted to leverage current technologies. Beyond quizzes, visuals, and tests created online, innovations such as artificial intelligence, augmented reality, and 3D printers are increasingly utilized in school environments. Consequently, teachers are expected to possess knowledge of and proficiency in these contemporary technologies.

Augmented reality (AR) facilitates the display of information using virtual elements that users cannot perceive directly with their senses, enabling interactions with the real world in novel ways. With AR-supported interaction techniques, virtual objects' position, shape, and other graphical features can be manipulated. Through finger gestures or handheld device movements, such as shaking and tilting, users can manipulate both virtual and physical objects in the real world. AR finds applications in learning, entertainment, or edutainment by enhancing users' perception of the real world and their interaction with it. Users can navigate around three-dimensional virtual images and view them from various angles, akin to real objects. Information conveyed through virtual objects aids users in performing real-world tasks more effectively. The Tangible Interface Metaphor, allowing manipulation of three-dimensional virtual objects with real-world cards without a mouse or keyboard, is a significant means to enhance learning (Kesim and Özarslan, 2012). Augmented Reality integrated into printed book pages transforms textbooks into dynamic information sources, offering a rich interactive experience even to those who are not proficient in technology.

The research landscape in artificial intelligence (AI) is evolving from technology-oriented applications aimed at improving production and performance to human-oriented applications focused on augmenting human intelligence with machine intelligence (Yang, 2021). Intelligent Teaching Systems, emerging in the 1970s, imitate teacher behavior to undertake teaching tasks. Over time, research on adaptive learning and hypermedia systems has proliferated, resulting in the

development of various tools such as decision support systems, content management systems, and learning management systems (Göçmez, 2023).

The amalgamation of artificial intelligence with educational sciences has been a focal point of academic research for over 30 years under the banner of "Application of Artificial Intelligence in education." According to a Stanford University report, artificial intelligence experts concentrate on eight domains, including transportation, healthcare, education, low-income communities, public safety, employment, and entertainment. Particularly in education, artificial intelligence holds promise for development across all educational levels by offering opportunities for personalized learning-teaching processes.

The integration of artificial intelligence technologies in education yields numerous benefits. These technologies can mitigate educational achievement gaps by providing personalized tutoring, supporting students with learning disabilities, alleviating costs for low-income families, and offering in-service training for teachers. Additionally, they streamline administrative tasks, facilitate differentiated and personalized education, ensure universal access, and support students beyond the classroom (Göçmez, 2023).

2. Method

Case study, one of the qualitative research methods, was used. Qualitative research; It covers the process of qualitative processes, which aims to examine a situation or issue in depth, handles events instantly, on-site and holistically, and techniques such as observation, interview and document analysis are widely used alone or together (Yıldırım & Şimşek, 2013).

The study group of the research consists of 30 teachers in private and state secondary education institutions in TRNC in the 2023-2024 academic year. Participants were randomly selected by region, with the permission of the Ministry of National Education and on the basis of volunteerism. The identity information of the participants was kept confidential in accordance with ethical rules. The distribution of the participants according to their fields is as follows (Table 2.1.).

Table 2.1. *Distribution of participants according to their fields (branch)*

	Branch	Participant	f	%
1.	Physical	K1, K5, K8, K9,K19,K20,K29	7	23.3
2.	Chemical	K12,K14,K17	3	10
3.	Biology	K13,K16,K18	3	10
4.	Maths	K22,K23,K24,K30	4	13.3
5.	Computer Technologies	K2,K3,K4,K6,K7,K10,K11,K1,K28,K21	10	33.3
6.	English	K25,K26,K27	3	10

Within the scope of this research, interview was used as the data collection method. The interview form was planned as semi-structured. While preparing the research questions, a literature review was conducted. The questions, which were determined based on qualitative and quantitative studies in the relevant literature, were checked by 2 qualitative researchers and reached their final

form by conducting a pilot study with two participants. Responses from the pilot study were not included in the analysis and research.

Appointments were made with the participants for the interviews within the scope of the research, and the interviews were planned at the participants' offices during working hours. The interviews lasted approximately 20-25 minutes on average. The interviews were audio-recorded with the participants' information and permission, and 640 minutes of data were collected.

The audio recorded data obtained during the analysis phase of the research were transcribed. Content analysis was used in the research. In order to increase consistency and confirmability, the data was analyzed together with 2 qualitative research experts and codes were extracted. Care was taken to ensure that the extracted codes were consistent with each other. The data was content analyzed and themes were created in line with the anecdotes and codes obtained. Within the scope of the themes, the issue of technological literacy and its reflections on education were discussed.

3. Findings

In the content analysis conducted after the qualitative data of the research was transcribed, 4 themes emerged in line with the 6 sub-problems of the study related to qualitative research. Sub-problems and themes are presented in Table 3.1.

In this section, the findings resulting from the content analysis are presented separately with an interpretive approach. While transcribing the anecdotes obtained from the teachers, the language was edited by remaining faithful to the original ideas and the words used.

Table 3.1. *Sub-problems and themes*

Sub Problems	Themes
Do teachers define themselves as technologically literate?	3.1.Defining technology literacy and access to technology
What are teachers' views on the use of technologies in education and its impact on student success?	3.2.Use of technology in education
What are teachers' opinions about their use of social media in education? What are teachers' views on the areas of use and purposes of artificial intelligence technologies? What do teachers think about getting to know current technologies and virtual reality applications and integrating them into education?	3.3.Following and adapting to current technologies
How do teachers self-evaluate their technology literacy?	3.4.Self-assessment in technology literacy

3.1. Defining Technology Literacy and Access To Technology

In the research, "Do teachers define themselves as technologically literate?" Regarding the sub-problem, teachers were first asked whether they knew the meaning of technology literacy, the answers given are in Table 3.2. is also shown. Afterwards, teachers were asked to define themselves as technologically literate. The answer to this question is Table 3.3. is also shown.

Table 3.2. *Do you know what technology literacy means?*

Reply	Participant	f	%
Yes	K1, K2, K3, K4, K5, K6, K9, K14, K15, K16, K17, K18, K19, K20, K21, K22, K23, K24, K26, K27, K28, K29	22	73.3
No	K7, K8, K10, K11, K12, K13, K25, K30	8	26.6

22 of the 30 teachers who participated in the research said that they knew what technology literacy meant (f:22, 73.3%). 8 of the participants stated that they did not know the definition of technology literacy (f: 8, 26.6%). Under these conditions, the concept was defined by giving examples within the scope of the interviews.

Table 3.3. *Would you describe yourself as technologically literate?*

Reply	Participant	f	%
Yes	K1, K2, K3, K4, K5, K6, K7, K8, K9, K11, K14, K15, K16, K17, K18, K19, K20, K21, K22, K23, K24, K26, K27, K28, K29	25	83.3
No	K10, K12, K13, K25, K30	5	16.6

While 25 of the 30 teachers participating in the research define themselves as technology literate (f: 25, 83.3%), 5 of the participating teachers do not define themselves as technology literate (f: 5, 16.6%). When the two tables are compared, it can be seen that there is a small difference between the question regarding the definition of technology literacy. In this regard, some anecdotes given by teachers are as follows;

> *"Due to my age, I am not familiar with current technologies, but if we had it, I would definitely learn it. (P17)"*
>
> *"I define myself as technologically literate, because I always try to follow the latest and improve my own skills accordingly. (K4)"*
>
> *"I came here after completing my master's degree abroad. I saw that teachers were constantly given new training on current technologies. I continue to improve myself as technologically literate with the skills I learned in these trainings. (P11)"*

Table 3.4. *What are the access opportunities to current technology in your schools?*

Code	Participant	Example Statement	f	%
I have access to technology	K1, K8, K9, K11, K14, K15, K16, K24, K27, K28,	We have access to technology because our schools have computer classes, laboratories and projectors.	10	33.3
We do not have technological means	K2, K3, K10, K21	Since our school is located in a rural area, it cannot be said that we have access to all kinds of technological facilities.	4	13.3
I use EBA	K25, K26	I use EBA content to make it easier for my students to practice at home within the scope of English lessons.	2	6.6
We use smart board	K19, K22, K23	I use a smart board to visually reinforce the subject during the lesson.	3	10
We use a projection device	K5, K7, K12	The projectors in our school are very old, but we still use them to show videos related to the curriculum.	3	10
I'm bringing my own computer	K13, K18, K20	I have my own course materials, so I usually enter the classroom with my own computer.	3	10
Our laboratory is missing/ Materials are missing	K4, K6, K10	We have computer laboratories, but we are experiencing a lack of materials due to long-term use.	3	10
We have internet connection	K17, K30	Since our school has an internet connection, it is useful for us in class.	2	6.6

In line with the answers given, the codes and the usage situations of the codes are shown. The codes "I can access technology", "We do not have technological facilities", "I use EBA", "We use a smart board", "We use a projector", "I bring my own computer", "Our laboratory is missing/Materials are missing", "We have an internet connection" have emerged. . In line with

these codes, it is seen that teachers can access technology opportunities within a certain framework. The findings show that it can be identified as up-to-date technology in schools; There are no facilities such as virtual reality glasses, 3D printers, tablet and smart board supported classrooms, or a planetarium room. Teachers' access to technology provides limited answers to current needs. Some anecdotes obtained in this context are as follows;

"I cannot find a visual environment in which I can explain the sky to my students. (P5)"

"As technological devices develop, I think our school and our education curriculum are falling far behind. (P13)"

3.2. Use Of Technology in Education

In the research, "What are teachers' opinions about the use of technologies in education and its impact on student success?" Regarding the sub-problem, teachers were asked 'What are your opinions on the use of technology in the education-training process?' The question was asked, the answers given are in Table 3.5. is also shown.

Table 3.5. *Teachers' views on the use of technology in education*

Code	Participant	Example Expression	f	%
Technology should be used	K1, K8, K9, K11, K14, K15, K16, K28, K4, K6, K10, K30	Since technology is a part of our lives, it should be used in the classroom as well.	11th	36.6
Technology should not be used too much	K24, K27, K29	Technology can distract students from the lesson and should be used at certain times.	3	10
Technology use should be supported	K25, K26, K2, K3, K10, K21, K17	In order for technology use to become widespread in schools, investments and budgets need to be increased.	7	23.3
Training should be provided for the use of technology	K19, K22, K23, K5, K7, K12, K13, K18, K20,	Training should be provided in cases where teachers do not master new technologies and teaching tools.	9	30

Even though teachers' opinions on the use of technologies in education vary, it can be said that they mostly view them from a positive perspective (Table 3.5.). The codes obtained in line with this question were determined as "Technology should be used", "Technology should not be used too much", "Technology use should be supported", "Technology use should be given training". While the density, percentage of use and sample expressions of these codes are listed in the table, some anecdotes with important opinions are as follows;

"It is not possible to keep students away from technology. We should also use technology tools that have become a part of life in lessons. (P8)"

"We need to teach our students the positive uses of technology in practice. (10)"

"Teachers need to be given up-to-date training in using technology, developing educational materials on the internet, and preparing tests and presentations. We see that some teachers cannot even use computers. (P13)"

"Providing educational technologies under equal conditions in all schools is a very costly task. The state must allocate a budget for this. (K2)"

Another question asked to teachers within the scope of this theme is "What are your views on the effect of technology use in education on student success?" It is in the form. Within the scope of this question, 2 participants (K24, K27) refrained from answering. For this reason, a "no answer" line was included at the end for these two participants.

Table 3.6. *Opinions on the impact of technology on success in education*

Code	Participant	Example Expression	f	%
Increases success	K3, K4, K7, K8, K9, K10, K16, K17, K18, K21, K23, K25, K26,	In order to increase students' success, technology must be integrated into the curriculum.	13	43.3
Technology addiction	K29	Children use technology too much at home, which causes them to become addicted.	1	3.3
Saves time	K1, K6, K11, K19	In the past, we would lose half of the lesson by drawing visuals on the board, but now we find visuals of everything in seconds, in great detail. This saves time.	4	13.3
Opens the door to new worlds	K2, K12, K14, K20, K28	It opens the doors of new worlds for students to reach their peers in different countries and share information.	5	16.6
Appeals to five sense organs	K5, K13, K15, K22, K30	In order to explain daily issues with science in the classroom environment, technologies that appeal to the five senses should be used.	5	16.6
unanswered	K24, K27		2	6.6

Teachers think that the use of technology in education positively affects success. The codes and anecdotes obtained are in this direction (Table 3.6.). Codes such as "Increases success",

"Technology addiction", "Saves time", "Opens the door to new worlds", "Appeals to the five senses" were obtained. Anecdotes obtained in this regard are as follows;

> "*I advised the students to download an English vocabulary application to their smartphones and study their daily vocabulary from there, which turned into a nice game between them. (K25)"*
>
> *"I enable university academics to follow courses on fun mathematics applications on YouTube to reinforce their mathematics subjects. I also saw that their interest increased when they did these practices in class. (P24)"*
>
> *"Students now want to learn coding in classes, I have many students who are just curious about this subject. (K6)"*

3.3. Following And Adapting to Current Technologies

In the research, "What are teachers' opinions about their use of social media in education? What are teachers' opinions about the areas of use and purposes of using artificial intelligence technologies? What do teachers think about recognizing current technologies and virtual reality applications and integrating them into education?" The findings of the sub -problems were analyzed within the scope of this theme. In this context, teachers were asked questions parallel to the sub-problems. The answers received are discussed in Table 3.7. as teachers' follow-up and adaptation of current technologies. Due to the lack of detailed and satisfactory answers to these sub-problems and the introduction of artificial intelligence, virtual reality and social media into current technologies, the analyzes are generally collected in a single table.

Table 3.7. *Teachers' follow-up and compliance with current technologies*

Code	Participant	Example Expression	f	%
I cannot follow current technologies	K25, K29	Since my child is very young, I do not have time to follow current technologies outside of school.	2	6.6
I follow current technologies	K2,K3,K4, K15,K28,K21	I follow current technologies because I see them as a part of my job, and I try to use all of them and show them to children.	6	20
I do not recommend social media to students	K1,K5, K8, K22,K23	I do not recommend the use of social media during exam periods because it distracts students too much and takes time.	5	16.6
I couldn't get used to artificial intelligence and	K14,K17, K13,K16,K18, K24,K30, K26, K27	I tried to research and learn artificial intelligence and virtual	9	30

Code	Participant	Example Expression	f	%
virtual reality applications		reality applications myself, but I was not very successful.		
Using artificial intelligence is very effective	K12, K9, K19,K20, K6,K7,K10,K11,	Using artificial intelligence and virtual reality in lessons is very effective, but there is no necessary material support, especially for virtual reality.	8	26.6

While teachers expressed their opinions about current technologies, the codes "I cannot follow current technologies", "I follow current technologies", "I do not recommend social media to students", "I could not get used to artificial intelligence and virtual reality applications", "Using artificial intelligence is very effective" came to the fore (Table 3.7.). In line with these codes, it is seen that teachers have difficulty in following and experiencing current technologies for various reasons. Although the internet and a computer are sufficient to use artificial intelligence applications, teachers reported that they were uncomfortable with using artificial intelligence (ChatGPT) to help students do their homework. The majority of teachers have not experienced virtual reality applications. It is seen that teachers working in the 'Computer Technologies' branch are particularly interested in this field. It has also been stated that it is difficult to plan virtual reality applications in terms of cost in public school conditions. Regarding the use of social media, some of the teachers (f:5) reported that they did not recommend it because it took too much time. Anecdotes that support the findings stated in the table (Table 3.7.) are given below;

"I do not feel young enough to follow current technologies, it is not possible for me to understand even if it is explained right now. (P29)"

"I especially watch technology channels to follow current technologies. (P15)"

"I follow current technologies through academic articles, I am currently doing a master's degree in my field. (K21)"

"I do not recommend it to my students because there are especially cases of child deception and sexual abuse on social media. (P5)"

"I have read studies about adolescents who are particularly exposed to cyberbullying on social media, so I want them to get into it as soon as possible. (P22)"

"Students know and follow artificial intelligence applications better than us. I learn most things from them. (P1)"

"I think artificial intelligence applications make student homework easier and do not encourage research. (P5)"

"I have never experienced virtual reality applications. (P17)"

"I was amazed when I put on the virtual reality glasses, it is difficult to bring this technology into the classroom. (P30)"

3.4. Self-assessment in technology literacy

One of the sub-problems of the research is "What are teachers' self-evaluations about technology literacy?" The last question of the interview was asked to the teachers: " How would you rate yourself in terms of being technologically literate?" The question was asked. The results obtained in this context are shown in Table 3.8. has also been obtained.

Table 3.8. *Teachers' self-evaluation in technology literacy*

Code	Participant	Example Expression	f	%
I think I am technologically literate	K2,K3,K4,K6,K7,K10,K11,K15,K28,K21,K8,K9,K19,K20,K13,K16,K18	I consider myself technologically literate as part of my job.	17	56.6
I don't think I'm technologically literate	K29	My interest in technology only consists of using my phone.	1	3.3
I strive to be technologically literate	K1, K5, K12, K22, K23, K24, K30	I follow online training to become technology literate.	7	23.3
Even if I wanted to, I don't understand technology.	K14, K17, K25, K26, K27	I only use technology to spend time on social media and watch videos, but I don't understand current things.	5	16.6
I think I am technologically literate	K2,K3,K4,K6,K7, K10,K11,K15,K28, K21, K8, K9, K19, K20, K13,K16,K18	I consider myself technologically literate as part of my job.	17	56.6

In line with the findings, the following statements were focused on: "I think I am technology literate", "I do not think I am technology literate", "I am trying to be technologically literate", "I do not understand technology even if I want to". The majority of teachers (f: 17, 56.6%) described themselves as technologically literate. The majority of these teachers are teachers from the 'Computer Technologies' branch. Only one teacher participant (K29) stated that he was not technologically literate and had no interest in technology.

4. Conclusion

The findings obtained as a result of the content analysis of the qualitative data from the research were summarized around four main themes based on six sub-problems. Relevant sub-problems and

themes based on these issues are presented in Table 3.1. By examining the data obtained throughout the research, a comprehensive understanding was developed of teachers' perceptions of technology literacy, use of technology, access to current technologies, and self-evaluation.

When focusing on teachers' perceptions of technology literacy, it is evident that the majority of them consider themselves technologically literate. In particular, the rate of teachers who view technology as part of their job and strive to stay updated is quite high. However, some teachers limit technology to basic uses only and struggle to keep up with current developments.

Upon examining opinions on the use of technology in education, it was observed that the majority of teachers believe technology should be used in the classroom. However, concerns have also been noted regarding excessive use of technology potentially distracting students. Additionally, emphasis was placed on the need for supporting the use of technology and providing training for teachers. Regarding access to and adaptation to current technologies, some teachers find it challenging to keep up with the latest technologies, while others actively follow and use them. In particular, there is a lack of knowledge and experience regarding artificial intelligence and virtual reality applications. Additionally, the idea that social media use should not be recommended to students has also emerged.

According to UNESCO's latest report, concerns about the harmful effects of digital technology in schools are increasing (UNESCO GEM, 2023). The report emphasizes that distributing computers to students without necessary educational exercises may lead to a loss of basic knowledge. In particular, it is stated that digital technologies, while important for supporting the learning process, may exacerbate inequalities in education and may be insufficient to improve learning outcomes. The report illustrates, for example, that distributing laptops without pedagogical integration in Peru did not enhance learning. Additionally, attention is drawn to research indicating that excessive use of digital technologies can negatively impact student performance. This report also focuses on the ethical aspects of digital technologies and highlights concerns regarding data privacy, especially for children. UNESCO emphasizes that the use of new technologies in education should be regulated and that technology should enhance the learning process without harming students and teachers. In conclusion, the report suggests that digital technologies must be carefully managed and effectively utilized in education, with a focus on prioritizing the needs of students and the role of teachers (UNESCO GEM, 2023).

Finally, in the section where teachers evaluated their own technology literacy, it was noted that the majority of them considered themselves technologically literate, but some encountered difficulties with technology and were continually striving to improve. However, several participants expressed disinterest in technology or were content with only basic uses. These findings offer an important resource for understanding teachers' approaches to technology and increasing technology integration. Training and support for technology are essential requirements for teachers to effectively use technology and provide the best education to students.

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