

Society 5.0 in Human Technology Integration: Digital Transformation in Educational Organizations*

Zübeyde Yaraşⁱ
Hatay Mustafa Kemal University

Fikriye Kanath Öztürkⁱⁱ
Hatay Mustafa Kemal University

Abstract

In the conducted study, it was aimed to determine the impacts of Society 5.0 on digital transformation in organizations in human technology integration. For this purpose, answers were sought to the questions of changing positions of people in line with changing business conditions, functions of people in the digital world, changing roles of management and managers, expectations of society from managers, how to establish a balance in organizations in the process of technological integration and change. In this research, which was structured in the “phenomenology” pattern within the framework of basic qualitative research, the study group was determined by using the “convenience sampling” method. In this context, the study group of the research consisted of 50 undergraduate students studying at Hatay Mustafa Kemal University, Faculty of Education. As a data collection tool, a semi-structured interview form consisting of five questions was used by the researchers. The data obtained were analysed using the “inductive thematic analysis” method utilize in the analysis of qualitative research. In line with the findings; it is among the results that technology affects people’s positions at work, advanced technology products limit people’s functions in society, Society 5.0 creates a need for transformation in the roles of managers, social expectations from managers change in the process of Society 5.0, and organizational balance is crucial for the digital transformation process.

Keywords: Society 5.0, Super-smart Society, Digital Transformation

DOI: 10.29329/ijpe.2022.426.26

* This study is an expanded version of the oral presentation presented at the FSMVU-EAK 2021 Educational Research Congress held at Fatih Sultan Mehmet Foundation University on 27-28 March 2021.

ⁱ **Zübeyde Yaraş**, Assist. Prof. Dr., Department of Educational Sciences, Hatay Mustafa Kemal University, ORCID: 0000-0001-6510-2655

ⁱⁱ **Fikriye Kanath Öztürk**, Assist. Prof. Dr., Department of Educational Sciences, Hatay Mustafa Kemal University, ORCID: 0000-0003-4513-3686

Correspondence: fikriye.kanatliozturk@mku.edu.tr

INTRODUCTION

Considering the history of humanity, technological developments and changes have created significant breaking points. From this point of view, technology is considered as a dominant concept that is the driving force in exchange for every period of human history. Society 5.0, which is expressed as the transformation of technology in the human-society dimension, is based on the realization of technological integration by creating harmony and balance between human and technology.

As of today, 66.6% of the world's population uses mobile phones, 59.5% uses the internet and 53.6% uses social media (We Are Social, 2021). As of the situation from the perspective of Turkey, 79% of people between the ages of 16-74 use the internet; considering internet access from home, it is revealed that the rate is determined as 90.7% (TÜİK, 2020). When considered in the context of these rates, it becomes almost impossible to avoid the effects of technological change and transformation. Therefore, within Society 5.0, it becomes important to be able to analyse the effects of the changing social structure and to be prepared for transformation processes in every field. Being one of these areas, education and educational organizations, are directly affected by the digital transformation process that took place with Society 5.0. Thus, educational approaches and educational institutions are being reshaped with the effect of technology. (Sudibjo et al., 2019). In this process, issues such as raising individuals who are creative, have knowledge of information and communication technologies, are digitally literate and adopting a lifelong learning approach gain importance (Keidanren, 2016; Teichert, 2019). Therefore, determining the change effect of technology in educational organizations, which have an important place in raising individuals equipped with the skills that societies will need in the future, in Society 5.0, or in other words "super-smart societies", is considered important in preparing organizations for the future so that organizations can survive. In this context, it is aimed to determine the effects of Society 5.0 in human technology integration and digital transformation in the management of educational organizations. In accordance with this purpose; In the research, answers were sought to the questions of changing business lives with digitalization, functions of people in the digital world, changing roles of managers, expectations of society from managers, technological integration, and how organizational balance can be established in the process of change in educational organizations.

Society 5.0

Societies have developed at various stages in the historical process, as shown in Figure 1. Considering these stages, the period in the hunter-gatherer period is Society 1.0; Society based on agricultural production. Society 2.0; Industry-based society with the Industrial Revolution Society 3.0; The knowledge-based society that has emerged with the developments in globalization and information and communication technologies has been expressed as Society 4.0. Society 5.0, which emerged in Japan, is expressed as super-intelligent societies with human-technology interaction, built on the foundations of Society 4.0 and where the effect of technology facilitating human life is at the forefront (Ari, 2021; Fukuyama, 2018; Harayama 2017; Keidanren, 2016; Wang et al., 2018).

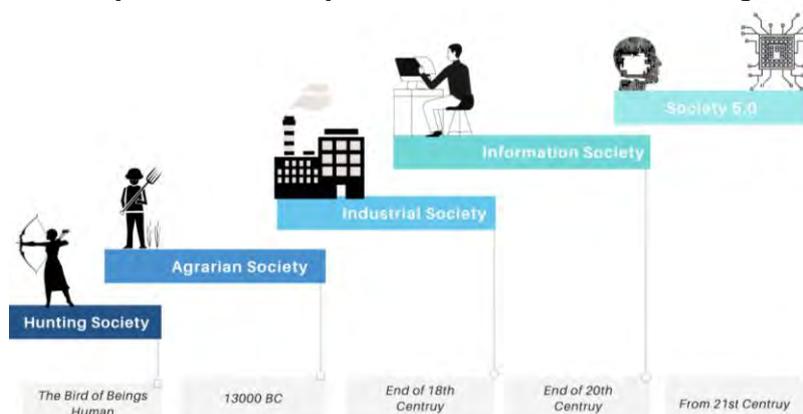


Figure 1. Social changes (Obtained from: Keidanren, 2018 <http://www.keidanren.or.jp/en/>)

Society 5.0 aims to integrate technological developments with society, to reduce concerns about the negative effects of technology and to create societies where technology can be effective. In Table 1, the focal points between Industry 4.0 and Society 5.0 have been expressed. In Industry 4.0, the social structure is more reciprocated as an “information society”, while in Society 5.0, the social structure finds its response as “super smart societies” (Akben & Avşar, 2018; Deguchi et al., 2020; Okan Gökten, 2018; Salgues, 2018). While Industry 4.0 positions technology as an element that increases production with the frequent use of automation systems, Society 5.0 places people at the centre of technological change and innovations (Costa, 2018; Fukuyama, 2018; Prasetyo & Arman, 2017).

Table 1. Industry 4.0 and Society 5.0 (Deguchi et al., 2020)

Industry 4.0 (Germany)		Society 5.0 (Japan)
Time	End of 20th century	21st century
Society	Information Society	Super smart society
Objectives, scope	Smart factories Focuses on manufacturing	Super-smart society Society as a whole
Key phrases	Cyber-physical systems (CPS) Internet of Things (IoT) Mass customization	High-level convergence of cyberspace and physical space Balancing economic development with resolution of social issues Human-centered society

In Society 5.0, social needs in different fields are met with advanced technology products such as artificial intelligence (Saracel & Aksoy; Skobelev & Borovik, 2017). In addition, it is also prioritized to increase the quality of life by increasing the welfare and happiness levels of societies with technology-human integration (Serpa & Ferreira, 2018).



Figure 2. The Society 5.0 – A Fusion of All Industry and IT (Keidanren, 2016)

Figure 2 indicates the sectors and digital technologies that will be transformed by Society 5.0. There does not seem to be an area that can be excluded from the transformation effect brought by Society 5.0, which is almost unaffected in society. Each field is interconnected and the change in each field affects the social structure of society. When evaluated on the basis of areas, Society 5.0 appears with different transformation requirements according to areas. Educational institutions, which appear

as one of these areas, are also one of the areas that will transform with Society 5.0. Therefore, the digital transformation of educational institutions and their ability to develop vision which is called the digital age continue to be increasingly important today.

Society 5.0 and Digital Transformation in the Management of Educational Organizations

Looking into literature, the concept of digital transformation is frequently used with the concepts of digitalization (digitization) and digitization (digitalization), however, these two concepts, which are thought to have the same meaning, have a semantic difference in terms of different levels of digital technology use (Gong & Ribiere, 2021).

Digital transformation has been defined as increasing the use of digital technologies in order to increase the efficiency of organizations, provide organizational agility, and increase the performance of employees (Henriette et al., 2015). In addition, digital transformation transforms business forms and organizational structures (Berghaus & Back, 2016). Digital transformation has brought radical changes in business and social life (Pflaum & Golzer, 2018). From this point of view, digital transformation is defined as organizational change in a sense. Organizational change takes place in areas such as knowledge management, use of technology, and the interaction of the organization with its internal and external environment (Mazurek, 2019). With the strategies determined to realize the organizational change process, organizations can quickly adapt to changes (Gohil & Deshpande, 2014). Therefore, the digital processes that come with Society 5.0 not only affect the society but also change the organizational structures. In particular, the effects of globalization and the developments in information and communication technologies have laid the groundwork for the development of digital processes. In the following processes, with the Industry 4.0 period, the transition to cyber-physical systems that carry the physical world to the virtual world has begun and the digital transformation effect has started to be felt clearly (Yankin, 2019). It is to such an extent that digital transformation has been evaluated as an important factor for the survival of organizations when the literature is analysed (Schreckling & Steiger, 2017). It can be seen that education, which is the catalyst of the transformation process, takes place in a transformation at important breaking points affecting the society. From the period of Society 1.0 to the period of Society 5.0, from the period of Industry 1.0 to the period of Industry 4.0, education has been in a transformation from Education 1.0 to Education 4.0, and today it is moving towards a transformation from Society 5.0 to Education 5.0 (Uğurlu Eren, 2020). In this context, the competence areas of education administrators have also been changing time to time.



Figure 3. Digital Competence Area (Obtained from Carretero, Vuorikari & Punie, 2017)

When Figure 3 is analysed, digital competence areas are discussed under five headings according to Carretero, Vuorikari and Punie (2017). The first topic was information and data literacy.

The second title included creating digital content, the third title was communication and collaboration, the fourth title was providing security in digital environments, and the fifth was problem solving competencies (Carretero et al., 2017). When these competence areas are analysed, school administrators should be able to acquire the skills in these competence areas in order to achieve digital transformation. According to Al-Harathi (2017), technological equipment and having digital competencies are among the most important competencies expected from school administrators.

METHODOLOGY

Research Design

In this research, which was structured with the basic qualitative research method, the “phenomenology” pattern was used. Qualitative research is defined as research in which data are obtained through qualitative data collection processes such as observation, interview or document analysis in the natural flow of perceptions and events (Yıldırım & Şimşek, 2011). In the phenomenology design, the focus of the research is to reveal the perceptions and thoughts about the phenomenon in detail (Groenewald, 2004). Thus, with the phenomenology design, the experiences of the participants regarding the phenomena can be revealed in detail (Annells, 2006; Christensen et al., 2015). With Society 5.0, it is aimed to reveal the thoughts on digital transformation in educational organizations.

Study Group

The study group was determined by using the “convenience sampling” method. In this context, the study group of the research consisted of 50 undergraduate students studying at Hatay Mustafa Kemal University Faculty of Education in the 2020-2021 academic year. The data related to the study group are given in Table 2.

Table 2. Demographic Information of Participants

Participant Code	Gender	Class	Participant Code	Gender	Class	Participant Code	Gender	Class	Participant Code	Gender	Class
PT-1	Woman	1	PT-15	Man	3	PT-29	Woman	3	PT-43	Woman	3
PT-2	Man	1	PT-16	Woman	3	PT-30	Man	3	PT-44	Man	3
PT-3	Woman	1	PT-17	Woman	3	PT-31	Man	3	PT-45	Woman	3
PT-4	Man	1	PT-18	Woman	3	PT-32	Woman	3	PT-46	Woman	3
PT-5	Man	1	PT-19	Woman	3	PT-33	Man	3	PT-47	Woman	3
PT-6	Woman	1	PT-20	Woman	3	PT-34	Woman	3	PT-48	Woman	3
PT-7	Woman	1	PT-21	Woman	3	PT-35	Man	3	PT-49	Woman	3
PT-8	Man	1	PT-22	Woman	3	PT-36	Woman	3	PT-50	Woman	3
PT-9	Man	1	PT-23	Man	3	PT-37	Man	3			
PT-10	Woman	1	PT-24	Woman	3	PT-38	Woman	3			
PT-11	Woman	1	PT-25	Man	3	PT-39	Woman	3			
PT-12	Woman	1	PT-26	Woman	3	PT-40	Man	3			
PT-13	Woman	1	PT-27	Man	3	PT-41	Woman	3			
PT-14	Woman	1	PT-28	Man	3	PT-42	Woman	3			

Data Collection Tool and Data Collection Process

A semi-structured interview form consisting of five open-ended questions was used as a data collection tool in the research. The questions prepared in line with the purpose of the research were evaluated by two field and one language experts, and the interview form took its final form in line

with the opinions of field experts. The questions in the semi-structured interview form are listed below:

- *How do you think that changing work styles (flexible working, remote working, work from home/Home Office/Home based business-work from home, etc.) will affect people's work lives with the effects of digitalization?*
- *Can high technologies (artificial intelligence, robot technologies, intelligent systems, etc.) which are human products limit the functions of people in society?*
- *In your opinion, what are the expectations from school administrators in the period of Society 5.0?*
- *In your opinion, what are the changing roles of school administrators in the Society 5.0 period?*
- *How can organizational balance be achieved in educational organizations in the transformation to human-technology-based societies with Society 5.0?*

Data were collected during extracurricular times via “Google Docs” on a voluntary basis with the teacher candidates who were in the study group. The data in text form were combined into a single file and a 104 page data file was obtained in line with the responses.

Data Analysis

Data were analysed by using the “inductive thematic analysis” method. Thematic analysis, which is a method used to define and analyse the themes of the obtained data, is a data strategy that allows the data to be explained at the smallest level (Braun & Clarke, 2006). In this context, data analysis was carried out in six stages (Braun & Clarke, 2006). These stages are given in Figure 4.

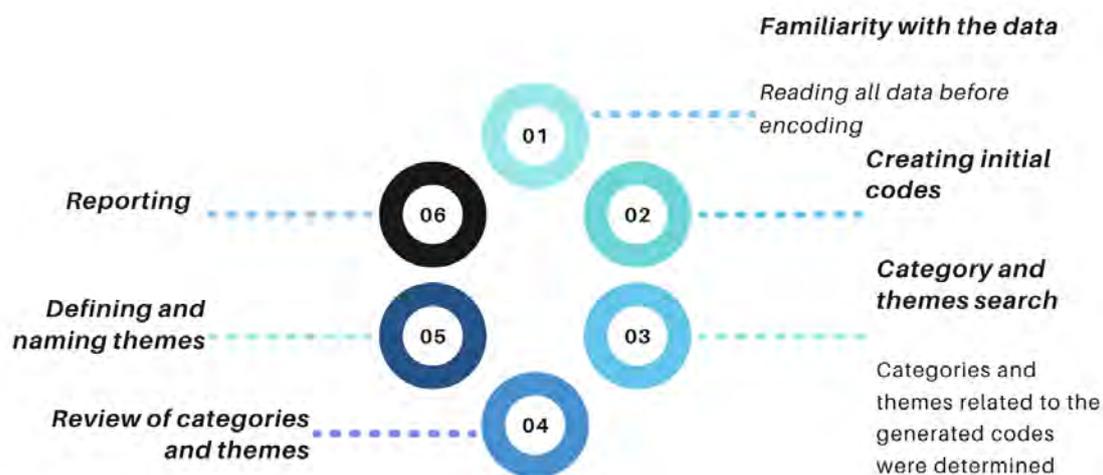


Figure 4. Stages Followed in the Data Analysis Process

In accordance with the analysis stages in Figure 4, the text files obtained from the interview forms at the beginning of the analysis process were coded separately for each teacher candidate by the researchers. The coding structured as “PT-G/2” format, including the pre-service teacher (PT), interview order and gender (G). The data were read by the researchers in the first stage. Thus, it was ensured that the researchers became familiar with the data. In the second stage, the first coding was revealed in line with the data. After the codes were obtained, the categories and themes related to the codes were determined in the third stage. The categories and themes obtained in the fourth stage were

reviewed and the codes, categories and themes obtained were reviewed in terms of suitability. The determined codes, categories and themes were checked again by two researchers. The themes obtained in the fifth stage were named, and after the themes were finalized, in the final and sixth stage, the reporting of the data, was started. In reporting, codes, categories and themes were visualized and revealed. Frequency values of codes are also included in these images. The views of the pre-service teachers are also included in direct quotations. The reliability rate of the research was calculated as 89.2% by using the formula “Percent of Consensus = Consensus / (Agreement + Disagreement) x 100” put forward by Miles and Huberman (1994). Miles and Huberman (1994) agree that the reliability rate calculated over 80% is sufficient; Yıldırım and Şimşek (2016) accept a reliability rate of 70% and above as sufficient. In this context, it is seen that the reliability ratio obtained meets the reliability condition.

FINDINGS

Findings on the Impacts of Digitalization on Business Life

“How do you think the changing work styles (flexible working, remote working, work from home/Home Office/Home-based business-work from home, etc.) will affect people’s work lives?” was asked to prospective teachers in order to reveal the effects of digitalization on business life. Information on the categories, codes and frequency values of the codes obtained as a result of the analysis made in line with the answers they gave to the question is given in Figure 5.

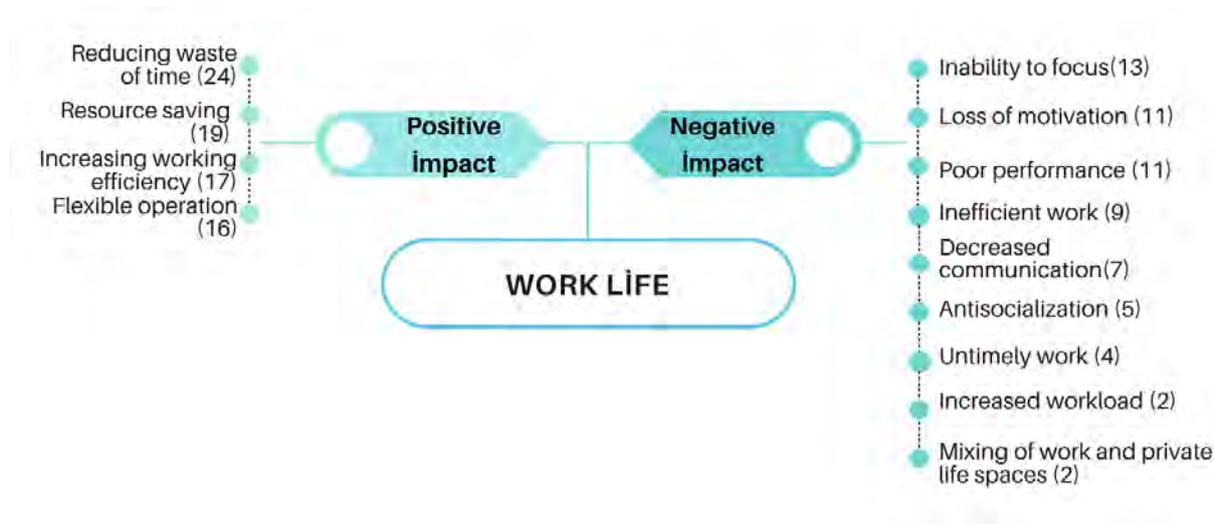


Figure 5. Opinions of Teacher Candidates on the Subject of Work Life

When Figure 5 is analysed, it is seen that the opinions of the pre-service teachers were evaluated under the theme of “Work Life” and this theme consisted of two categories as positive and negative impact. When the codes in the Positive Impact category are examined, these codes are “reducing time losses (f=24)”, “saving resources (f=19)”, “increasing working efficiency (f=17)”, “flexible working (f=16)”. It has been stated that the most expressed positive effect of digitalization on business life is to reduce time losses. PT-M/3 thinks of this code as “...people avoid the loss of time they would experience especially in transportation with the ease brought by digitalization.”. PT-W/2’s opinion on other codes is “For employees, there is less time lost in traffic and therefore less stress. If the process can be managed correctly, productivity increase and resource savings can be achieved”. PT-W/37 thinks “They will be able to do their work from where they are without the need to go to the workplace by trying to have the features that can use technology well. They can adopt a more flexible working method in their work”. PT-M/40 “...first of all, since the employees will not come to work, they will not have road problems. Employees are sleep deprived since they get up very early in the pre-road preparation phase, and most of the time, the person cannot meet their basic needs such as eating and taking a shower in a short time. This situation adversely affects the working

performance. With business forms such as remote working, employees get a chance to sleep a little longer and start the shift rested, so they are not road tired. We can say that this situation actually reduces work-related excuses (my child got sick, there was an accident on the road, I was very sick, I was late, there was traffic, etc.). At the same time, it is one of the advantageous situations for managers, and it also reduces the in-office costs caused by employees (tea, coffee, electricity, water, food, etc.)”.

When we look at the codes in the negative impact category, “inability to focus (f=13)”, “loss of motivation (f=11)”, “poor performance (f=11)”, “inefficient work (9)”, decreased communication (f=7)”, “antisocialization (f=5)”, “untimely working (f=4)”, “increased workload (f=2)”, “mixing of work and private life (f=2)”. Regarding the code of not being able to focus, **PT-M/23** “... distraction may occur after a certain period of time with the comfort of being at home in works carried out on the internet and in computer environment. In this case, serious problems may occur in focusing...” When we look at the exemplary opinions about the other codes, **PT-W/43** “On the other hand, the state of being social, which is the characteristic of human existence, will also weaken. Because people need socialization. Socialization will decrease as robots start working everywhere. The gathering of people will decrease.”; **PT-M/40** “...I think that people are not sufficiently motivated in their remote processes.”; **PT-M/36** “...the fact that technology has changed business structures has negatively affected people. The reason is that the home environment accustoms people to comfort.”; **PT-W/17** “..... changing work conditions and working styles such as flexible working and remote working have increased the comfort level of people. Since there are no collective working areas, people’s motivation may be lost. Due to this, work efficiency may decrease and productivity may decrease.”.

Findings Obtained on Human Functions in the Digital World

In order to determine the limiting effect of the digital world on people’s functions, the categories, codes and information on the frequency values of the codes obtained as a result of the analysis given in line with the answers to the question “**Can human-made high technologies (artificial intelligence, robotic technologies, intelligent systems, etc.) limit the functions of people in society?**” are included in Figure 6.



Figure 6. Teacher Candidates Views on Functions Theme

When Figure 6 is examined, it is seen that the theme of "Functions" consists of one category, the limiting effect.

The codes formed in the limiting effect category were "**feeling of inadequacy(f=24)**", "**machine/robot preference instead of manpower (f=22)**", "**compliance problem (f=16)**", "**digital fatigue (f=11)**" and "inequality of opportunity (f=6)". When looking at the exemplary opinions regarding the code of inadequacy, **PT-M/27** "... High technologies that are human products can limit people’s function in society. The reason is that machines can do much more in a short time than humans can. In this case, people may have difficulty competing with machines and may not consider themselves sufficient to do business" while **PT-W/29** expressed her opinion on machine/robot

preference code instead of manpower as "... *Technological products in all areas actually reduce the need for people. The use of machines that are faster than humans, tireless machines, can at some point cause people to no longer be needed in some business areas.*". PT-W/33 said that her idea was "... *Our attempt at the age of digital transformation has been so rapid and radical that we have no opportunity to see what is facing extinction in society. For example, while buses used to have assistants collecting bus fares, now public transport cards, which we call kentkart, have replaced assistants by improving their infrastructure. In this regard, we can say that digital developments limit human function.*".

Findings on the Changing Roles of Managers in Society 5.0 Period

In order to determine the changing managerial roles in the Society 5.0 period, the categories, codes and information on the frequency values of the codes obtained as a result of the analysis made in line with the answers given to the question "*What are the changing roles of managers in the Society 5.0 period in your opinion?*" are included in Figure 7.



Figure 7. Teacher Candidates' Views on The Changing Roles of Managers

When Figure 7 is analysed, three categories are created under the theme of "*Changing Roles of Managers*"; organizational person size, organizational development dimension and organizational decision size.

The codes generated in the organization-person size category were "*strong communication (f=19)*", "*interaction (f=15)*", "*expanding networks (f=7)*". PT-M/2 "... *managers should keep communication as high as possible in working environments where the effects of technology are felt very highly. Because I think that communication is an indispensable competence due to the social structure of the person, no matter where the technology comes from.*"

The codes generated in the development dimension category were "*digital team leadership (f=14)*", "*ensuring digital security (f=13)*", "*building digital teams (f=12)*", "*visionary gaze (f=9)*", "*mentoring (f=10)*", "*agility (f=6)*". Regarding the digital team leadership code, PT-W/49 expressed his as opinion "... *In the age of digital transformation, having a certain knowledge is not considered sufficient. Therefore, administrators should also be able to be leaders in online environments...*". Regarding mentoring, PT-W/11 "... *in organizations where technology is used intensively, managers should be able to guide their employees on issues such as motivation, compliance, and information provision...*" she has expressed his opinion. Regarding the code for ensuring digital security, PT-W/10 "... *The biggest problem in digital environment is software hackers and malicious spies. It will be up to the managers to prevent this.*" PT-M/31 expressed as his opinion "... *People living in a society with a*

community 5.0 model will expect senior executive skills and functions from their managers. Because the use of technology, artificial intelligence and digitalization in all areas of life with human intelligence and capabilities will also make it difficult to manage society and organizational structures in society. With the increase of digitalization, security risks and privacy issues will increase even more. Managers are expected to find solutions to these problems..."

It was observed that the codes formed in organizational decision size were **"flexibility (f=12)"**, **"risk analysis (f=9)"**. PT-W/12 *"... managers do not act with strict stereotypes when performing their duties in such a rapid change process, and they can succeed if they can be flexible in carrying out changes..."*

Findings on Society's Expectations from Managers in The Period 5.0

In order to determine the expectations of the society from the managers in the period of Society 5.0, the teacher candidates were asked the question **"What are the expectations of the society from the managers in the period of Society 5.0?"**.

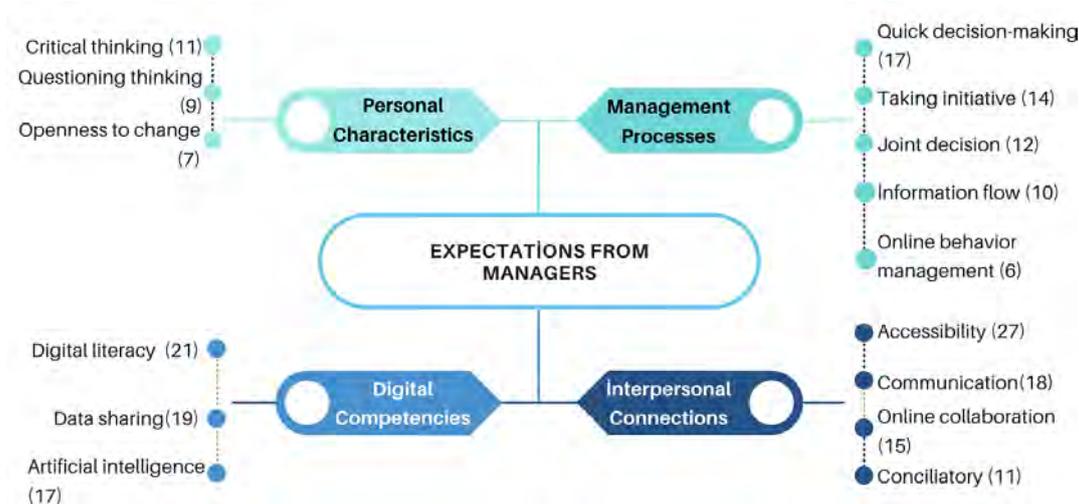


Figure 8. Teacher Candidates' Opinions on Expectations from Managers

When Figure 8 is analysed, it is seen that the theme of **"Expectations from Managers"** consists of four categories: personal characteristics, management processes, digital competencies and interpersonal connections.

It was observed that the codes formed in the personal characteristics category were **"critical thinking (f=11)"**, **"questioning thinking (f=9)"**, **"openness to change (f=7)"**. Regarding the code of openness to change, was the idea of PT-W/14 *"... especially the effect of managers in such periods is even more pronounced. Therefore, innovative managers with developed mindsets enable their institutions to adapt faster in technological transformations..."*

It was observed that the codes formed in the management processes category were **"quick decision-making (f=17)"**, **"taking initiative (f=14)"**, **"joint decision (f=12)"**, **"information flow (f=10)"**, **"online behavior management (f=6)"**.

The codes formed in the digital competencies category were **"digital literacy (f=21)"**, **"data sharing (f=19)"**, **"artificial intelligence (f=17)"**. Regarding the digital literacy code, PT-M/5 *"Human-technology should gain the digital literacy skills of individuals in the transition to societies."* PT-W/18 is *"... the competence of administrators in artificial intelligence, data storage, data delivery is very important for management forces..."*

The codes generated in the interpersonal connection category were found to be *"accessibility (f=27)"*, *"communication (f=18)"*, *"online collaboration (f=15)"*, *"conciliatory (f=11)"*. The idea of PT-W/45 *"... I think it is even more important in digital environments to communicate, to reach the person we want at any time..."*

Findings on Achieving Organizational Balance in Transformation with Society 5.0

In order to reveal the requirements for achieving organizational balance in the social transformation with Society 5.0, the categories, codes and information on the frequency values of the codes obtained as a result of the analysis given in line with the answers given to the question *"How can organizational balance be achieved in the transformation of society 5.0 to human-technology-based societies?"* are included in Figure 9.



Figure 9. Teacher Candidates Views on Organizational Balance Theme

When Figure 9 is analysed, it is seen that the theme of **"Organizational Balance"** consists of two categories; organizational change and organizational development.

It was observed that the codes formed in the category of organizational change were *"solution to barriers to resistance to change (f=19)"*, *"openness to change (f=15)"*, *"organizational agility (f=11)"*, *"social expectations (f=5)"*. PT-W/6 considers the code of openness and social expectations for change *"... First of all, in order to achieve organizational balance, people need to follow innovations and know how to use technology. Therefore, it may be beneficial for managers to meet the needs of the society and to show flexibility when necessary in order to achieve organizational balance..."*; PT-M/44 thought *"... people and technology interact in a unique way. In this context, it is critical to achieve an organizational balance between human and technology. In order to maintain organizational balance, it is of capital importance that societies keep up with change and technological developments. Since if you resist or cannot keep up with the changes, the balance may be disturbed."*. In addition, PT-W/7 *"... People need to be open to change in technology in order to achieve organizational balance. People who are away from technological developments can disturb the organizational balance between technology and man..."*.

The codes formed in the category of organizational development were *"improving leadership skills (f=24)"*, *"interpersonal cohesion (f=18)"*, *"increasing employee quality (f=14)"*, *"creating a conciliatory culture (f=11)"*. Regarding the improving leadership skills PT-M/35 *"...I think leadership behaviors are very important in environments where change is necessary and rapid. For this reason, the efforts of leaders to ensure harmony between technology and people will need leadership skills in the digital environment."*, and regarding the increasing employee PT-W/11 *"...I think that being able to follow technology is necessary for every employee. Because technology competence provides professional development."*

DISCUSSION AND CONCLUSION

In line with the rapid developments in information communication technologies, the question of how the management of educational organizations open to the impact of these developments should change comes to the fore. Managers who can successfully adapt to digital processes will ensure the continuity of organizations. It is known that technological developments have established the basis for radical changes in societies. Today, with the Covid-19 global pandemic, radical changes in education have occurred, and in 2020, education was completely digital in most countries. With this effect in 2020, it is predicted that digitalization in education will become more widespread and concepts such as remote working, artificial intelligence, cloud computing, internet of things will be more central in education. Since managers are in a position to form the starting point for digital transformation in education, it is important that they are aware of the roles they will take on, that they can analyse community expectations and develop a strategy to effectively carry out management processes. When the results are evaluated in line with the findings obtained from the study, it is possible that there is a multifaceted impact on society, including in business life, with human technology integration, society 5.0 increasing the prevalence of technology.

Granrath (2017) is community 5.0 has changed many areas while Puncreobutr (2016) has stated that people's work and social lives have also changed during the transformation process. Especially in open systems, environmental and organizational interaction continues (Sabuncuoglu & Tüz, 2016). Schools with open systems are also directly affected by the changes brought about by digital transformation.

With digital transformation, business lives are changing and concepts such as working from home come to the fore. Due to the global pandemic affecting the whole world, working remotely/ from home has been the way it works for all organizations, especially in 2020 (ILO, 2020). In the researches, working remotely/from home was among the thoughts expressed as having positive and negative effects (Acar & Acar, 2019). Positive aspects include cost reduction, saving time, increasing motivation, being able to spend more time with families (Akça & Tepe Küçükoglu; Aydın Göktepe, 2020; Kavi & Koçak, 2010); negative aspects include loneliness, inability to socialize, destabilization of work and home life, the emergence of technical problems, stress (Akça & Tepe Küçükoglu, 2020). Similarly, the results obtained from the research revealed the positive and negative effects of Society 5.0 on the way they work. According to these results, it has been concluded that changing business conditions with technological developments in business life with Society 5.0 can negatively affect people as well as positively. When looking at the positive effects, the effects such as the possibility of flexible working and the saving of time and resources spent going to work were expressed as a priority. When negative effects were evaluated, negative effects such as inability to focus, reducing motivation, and mixing work and private living space were among the priority outcomes of technology and business integration.

Digital transformation is not limited to mechanical structures, and it is necessary to consider that digital transformation has social effects with information sharing and collaborative approach in order to be successful in terms of adapting to digital processes (Gözüküçük, 2020; Stolterman & Fors, 2004). Similarly, Frankiewicz and Chamorro-Premuzic (2020) emphasized that human beings are at the heart of digital transformation. In this respect, the level of development of people is more important than the level of mechanical development in the digital transformation process.

Another conclusion from the research was that it was thought that high technologies could limit people's function by reducing the need for people. With the integration of new technologies into institutions, the formation of digital teams has been an issue that has been raised for institutions (Chutnik & Grzesik, 2009; Parker, 2007). Digital teams enable the use of team members' information communication technologies through digital tools without being bound by certain limits (Peters & Manz, 2007). The ability of managers to manage digital teams positively or negatively affects the output of organizations. Therefore, it can be said that the ability of managers to manage these teams correctly is related to the managerial effectiveness of the managers. Berry says (2011) the managerial

success or failure of digital teams has been attributed to poor leadership qualifications of managers. In this context, it is possible to say that managerial effectiveness and managers' digital leadership competencies are important in digital environments. Similarly, the ability to build digital teams, as obtained in the research, was among the prominent roles of managers in the Society 5.0 period. When looking at other roles, roles such as expanding networks, enabling interaction, digital team leadership, and ensuring digital security have come to the fore. Information obtained through each device used in digital media is stored (Doğan & Arslantekin, 2016). Therefore, we face the question of securing both personal and organization data in digital environments. As stated in the Ministry of National Education 2023 Vision Document, it is planned to move to a data-based management system in schools (MEB, 2018). Therefore, since the prevalence of digital media brought about by digital transformation brings with it digital risks, ensuring digital security in environments where management processes are data-based is seen as one of the important areas of responsibility of managers.

Although it is seen that expectations differ with digital transformation when looking at the expectations of the society from managers, these expectations include digital literacy, data sharing, taking initiative, accessibility, online collaboration, online behavior management, and providing critical and questioning thinking competence. Technology size has been one of the focuses of school administrators' management processes (Anderson & Dexter, 2005). In this respect, technological developments and changes also alter the roles and responsibilities of school leaders. This idea was supported by the results of in the results of the research.

In order for organizations to adapt to these changes in the process of rapid change and therefore to maintain organizational balance, it has been concluded that it is important to create an agile organizational structure, to create a conciliatory culture, to increase leadership skills, to eliminate barriers of resistance to change. Frankiewicz and ChamorroPremuzic (2020) have demonstrated that the process of change must start from managers. In this respect, the importance of the role of managers in the process is undeniable. Deshpande (2018) has demonstrated that the adoption of new technologies is not considered important enough among the obstacles that exist in the realization of digital transformation. Adapting to change is especially important in critical institutions that affect long-term outcomes such as education and community development. With the adaptation to change and the reduction of the effects of entropy in organizational structures, the existence of a threatening effect for the balance of the organization will be eliminated. As stated by Sackmann, Eggenhofer-Rehart and Friesl (2009), it is seen as important for organizations to adapt to change by identifying their needs for change.

Suggestions

In the context of the results reached by the research, the following recommendations can be presented;

- In educational institutions where the effects of technology are felt at a high level, managers have a high level of responsibility to coordinate processes. Therefore, managers should increase the capacity of their employees to adapt to change. In these processes, managers should be in an easily accessible position by all employees.
- Digital literacy is among the basic competencies in the digital world. Therefore, since digital literacy is seen as a critical starting point for the start of the digital transformation process, managers should be able to bring their digital literacy qualifications to the desired level. Then, managers should pay attention to increasing the digital literacy competence of all stakeholders by influencing their institutions.
- Managers' level of competence should be increased in digital leadership, the ability to build and manage digital teams, and online behavior management.

- In the process of digital transformation, it is important that managers prevent elements that can have devastating effects for organizational balance in order to prevent entropy in organizations. Therefore, managers should also actively adopt management processes in digital processes.
- Managers should enable employees in all decision-making processes.
- The social effects of digital transformation should be analysed and necessary developer or remedial measures should be taken by the administrators in order to resolve these effects.

REFERENCES

- Acar, P., & Acar, A. (2019). İşletmelerde uzaktan çalışanların yönetilmesi: Lojistik sektöründe nitel bir alan araştırması. *Ömer Halisdemir Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 12(4), 514-526.
- Akben, İ., & Avşar, İ. İ. (2018). Industry 4.0 and light out manufacturing: An overview. *Türk Sosyal Bilimler Araştırmaları Dergisi*, 3(1), 26-37.
- Akça, M., & Tepe Küçüköğlü, M. (2020). Covid-19 and its effects on business life: Work at home. *Journal of International Management Educational and Economics Perspectives*, 8(1), 71-81.
- Al-Harathi, A. S. A. (2017). Technological self-efficacy among school leaders in Oman: A preliminary study. *Journal of Further and Higher Education*, 41(6), 760-772.
- Anderson, R. E., & Dexter, S. (2005). School technology leadership: An empirical investigation of prevalence and effect. *Educational Administration Quarterly*, 41, 49-82.
- Anells, M. (2006). Triangulation of qualitative approaches: Hermeneutical phenomenology and grounded theory. *Journal of Advanced Nursing*, 56(1), 55-61.
- Arı, E. S. (2021). Super Smart Society: Society 5.0. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 23(1), 455-479.
- Aydın Göktepe, E. (2020). Management practices for business sustainability during the crisis period; COVID-19 pandemic research. *Journal of Social, Humanities and Administrative Sciences*, 6(26), 630-638.
- Berghaus, S., & Back, A. (2016, October 26). *Stages in digital business transformation: results of an empirical maturity study*. MCIS 2016 Proceedings. <https://aisel.aisnet.org/mcis2016/22>.
- Berry, G. R. (2011). Enhancing effectiveness on virtual teams: Understanding why traditional team skills are insufficient. *Journal of Business Communication*, 48(2), 186-206.
- Braun, V., & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Carretero, S., Vuorikari, R., & Punie, Y. (2017). Digcomp 2.1: The digital competence framework for citizens with eight proficiency levels and examples of use, EUR 28558 EN, Publications Office of the European Union, Luxembourg.
- Chutnic, M., & Grezesik, K. (2009). Leading a virtual intercultural team: Implications for virtual team leaders. *Journal of Intercultural Management*, 1(1), 82-90.

- Christensen, L., Johnson, R., & Turner, L. (2015). *Araştırma yöntemleri: Desen ve analiz* (Çev. Ed. A. Aypay), Ankara: Anı Yayıncılık.
- Costa, J. M. (2018, March 5). *Sociedade 5.0: A mudança que aí vem (Society 5.0: The change that is coming)*. <https://hrportugal.sapo.pt/sociedade-5-0-a-mudanca-que-ai-vem/>.
- Deguchi, A., Hirai, C., Matsuoka, H. & Nakano, T., Oshima, K., Tai, M., & Tani, S. (2020). What Is Society 5.0?. In: Hitachi-U Tokyo Laboratory (H-UTokyo Lab.) (eds) Society 5.0. Springer, Singapore. https://doi.org/10.1007/978-981-15-2989-4_1.
- Deshpande, A. (2018, July 3). *How to bring digital transformation to education*. <https://www.forbes.com/sites/forbestechcouncil/2018/07/03/how-to-bring-digital-transformation-to-education/?sh=29b0b19c5036>.
- Doğan, K., & Arslantekin, S. (2016). Büyük veri: Önemi, yapısı ve günümüzdeki durum. *Ankara Üniversitesi Dil ve Tarih Coğrafya Fakültesi Dergisi*, 56(1), 15-36.
- Frankiewicz, B., & Chamorro-Premuzic, T. (2020, May 6). *Digital transformation is about talent, not technology*. Harvard Business Review. <https://hbr.org/2020/05/digital-transformation-is-about-talent-not-technology>.
- Fukuyama, M. (2017, August 6). Society 5.0: Aiming for a new human-centered society. https://www.hitachi.com/rev/archive/2017/r2017_06/trends/index.html.
- Gohil, S., & Deshpande, P. (2014). A framework to map a practice as organization development. *Procedia Economics and Finance*, 11, 218-229.
- Gong, C., & Ribiere, V. (2021). Developing a unified definition of digital transformation. *Technovation*, 102, 1-17.
- Gözükcüçük, M. (2020). *Dijital dönüşüm ve ekonomik büyüme*. (Yüksek Lisans Tezi). İstanbul Ticaret Üniversitesi, Sosyal Bilimler Enstitüsü, İktisat Anabilim Dalı, İstanbul.
- Groenewald, T. (2004). A phenomenological research design illustrated. *International Journal of Qualitative Methods*, 3(1), 1-26.
- Harayama, Y. (2017, August 6). Society 5.0: Aiming for a new human-centered society. https://www.hitachi.com/rev/archive/2017/r2017_06/trends/index.html.
- Henriette, E., Feki, M., & Boughzala, I. (2015, December 25). The Shape of Digital Transformation: A Systematic Literature Review. MCIS Proceedings. 10. <https://aisel.aisnet.org/mcis2015/10>.
- Kavi, E. & Koçak, O. (2010). Ethical aspect of telecommuting in the information society. *Sosyal Siyaset Konferansları*, 59, 69-88.
- Keidanren (2016, July 19). In pursuit of an environment for utilization of data- Towards achievement of Society 5.0. https://www.keidanren.or.jp/en/policy/2016/054_proposal.pdf.
- Keidanren (Japan Business Federation) (2016, April 19). Toward realization of the new economy and society. Reform of the economy and society by the deepening of “Society 5.0”. https://www.keidanren.or.jp/en/policy/2016/029_outline.pdf.
- Kırcı, B. (2019). Work from home: Is it freedom or captivity?. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 21(1), 173-196.

- Mazurek, G. (2019). *Transformacja cyfrowa - perspektywa marketingu*. Warszawa, Poland: PWN.
- MEB (2018). 2023 Eğitim Vizyonu. Milli Eğitim Bakanlığı. http://2023vizyonu.meb.gov.tr/doc/2023_EGITIM_VIZYONU.pdf.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded Sourcebook*. (2nd ed). Thousand Oaks, Sage.
- Okan Gökten, P. (2018). Manufacturing in the dark: Scope of the cost in the new age. *Muhasebe Bilim Dünyası Dergisi*, 20(4), 880-897.
- Parker, S. K. (2017). That is my job': How employees' role orientation affects their job performance. *Human Relations*, 60(3), 403-434.
- Peters, L. M., & Manz, C. C. (2007). Identifying antecedents of virtual team collaboration. *Team Performance Management*, 13, 117-129.
- Pflaum, A., & Golzer, P. (2018). The IoT and digital transformation: Toward the data-driven enterprise. *IEEE Pervasive Computing*, 17(1), 87-91. doi:10.1109/MPRV.2018.011591066.
- Puncreobutr, V. (2016). Education 4.0: New challenge of learning. *Journal of Humanities and Social Sciences*, 9(5), 92-97.
- Prasetyo, Y. A., & Arman, A. A. (2017, January 25). Group management system design for supporting Society 5.0 in smart society platform. Proceedings of the 2017 International Conference on Information Technology Systems and Innovation (ICITSI). Bandung, Indonesia: IEEE. <https://doi.org/10.1109/icitsi.2017.8267977>.
- Rose, P., Beeby, J., & Parker, D. (1995). Academic rigour in the lived experience of researchers using phenomenological methods in nursing. *Journal of Advanced Nursing*, 21(6), 1123-1129. <https://doi.org/10.1046/j.1365-2648.1995.21061123>.
- Sackmann, S. A., Eggenhofer-Rehart, P. M., & Friesl, M. (2009). Sustainable change: Long-term efforts toward developing a learning organization. *The Journal of Applied Behavioral Science*, 45(4), 521-549.
- Salgues, B. (2018). *Society 5.0 industry of the future, technologies, methods and tools*. London: ISTE Ltd.
- Saracel, N., & Aksoy, İ. (2020). Society 5.0: Super Smart Society. *Social Sciences Research Journal*, 9(2), 26-34.
- Schreckling, E. & Steiger, C. (2017). *Digitalize or drown*. In G. Oswald and M. Kleinemeier (Eds.) *Shaping the digital enterprise* (pp. 3-27), Waldorf: Springer.
- Serpa, S., & Ferreira, C. M. (2018). Society 5.0: Innovation, uncertainty and social sciences. *Management and Organizational Studies*, 5(4), 26-31.
- Skobelev, P.O., & Borovik, S.Y. (2017). On the way from Industry 4.0 to Industry 5.0: from digital manufacturing to digital society. *Industry 4.0*, 2(6), 307-311.
- Stolterman E., & Fors A.C. (2004) *Information Technology and the Good Life*. In: Kaplan B., Truex D.P., Wastell D., Wood-Harper A.T., De Gross J.I. (eds) *Information Systems Research*. IFIP International Federation for Information Processing, vol 143. Springer, Boston, MA. https://doi.org/10.1007/1-4020-8095-6_45.

- Sudibjo, N., Idawati, L., & Harsanti, HG.R. (2019). Characteristics of learning in the era of industry 4.0 and society 5.0. *Advances in Social Science, Education and Humanities Research*, 372, 276-278.
- Teichert, R. (2019). Digital transformation maturity: A systematic review of literature. *Acta Universitatis Agriculturae Et Silviculturae Mendelianae Brunensis*, 67(6), 1673-1687. <https://doi.org/10.11118/actaun201967061673>.
- Uğurlu Eren, Z. (2020). Toplum 5.0 ve Dijital Dünyada Toplumsal Dönüşüm ve Eğitim 5.0. Akçay, D. and Efe, E. (Eds.), *Dijital Dönüşüm ve Süreçler* (pp. 169-206). Publisher: İstanbul Gelişim Üniversitesi Yayınları.
- Wang, F. Y., Yuan, Y., Wang, X., & Qin, R. (2018). Societies 5.0: A new paradigm for computational social systems research. *IEEE Transactions on Computational Social Systems*, 5(1), 1-8. <https://doi.org/10.1109/TCSS.2018.2797598>.
- We Are Social (2021, January 27). Digital 2021: Global Overview Report. <https://datareportal.com/reports/digital-2021-global-overview-report>.
- Yankın, F. B. (2019). Dijital dönüşüm sürecinde çalışma yaşamı. *Trakya Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 7 (2), 1-38.
- Yıldırım, A., & Şimşek, H. (2011). *Nitel araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.