

Artículo de investigación

Evaluation of the opinions of the manager, teacher, employees (secretary and servants) about school management of the digitalization and management processes of the system engineering model in education

Evaluación de las opiniones del gerente, docente, empleados (secretarios y funcionarios) sobre la gestión escolar de los procesos de digitalización y gestión del modelo de ingeniería de sistemas en educación

Avaliação das opiniões do gestor, professor, empregados (secretário e servidores) sobre a gestão escolar dos processos de digitalização e gestão do modelo de engenharia de sistemas em educação

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Written by:
Gülyüz Debeş³²
Behcet Oznacar³³

Abstract

The relevance of the study is to show the benefits of digitalization and management processes to education within system engineering. The Impact of the System Engineering Model on School Management is a comprehensive process that enables decision making based on facts with a logical process and analytical techniques for the most demanding system problems. Seminars have been held to carry out this research. Pre-test and post-test were applied in the study and the results were evaluated. It tried to measure how effective seminars were in changing education. It is aimed to understand the effect of system engineering process on school management. The relevant areas and subfields of system engineering are also included. Direct relationships between the variables of motivation, participation and success that affect the relationship between teacher and student have been found. For this reason, educational processes, work towards improving the processes and the effects of these processes are important in terms of learning and teaching.

Keywords: System Engineering, Technology, Student Motivation, Change in Education, Management Processes.

Resumen

La relevancia del estudio es mostrar los beneficios de la digitalización y los procesos de gestión para la educación dentro de la ingeniería de sistemas. El impacto del modelo de ingeniería del sistema en la gestión escolar es un proceso integral que permite la toma de decisiones basadas en hechos con un proceso lógico y técnicas analíticas para los problemas más exigentes del sistema. Se han realizado seminarios para llevar a cabo esta investigación. Las pruebas previas y posteriores se aplicaron en el estudio y se evaluaron los resultados. Intentó medir cuán efectivos eran los seminarios para cambiar la educación. Está dirigido a comprender el efecto del proceso de ingeniería del sistema en la gestión escolar. También se incluyen las áreas y subcampos relevantes de ingeniería de sistemas. Se han encontrado relaciones directas entre las variables de motivación, participación y éxito que afectan la relación entre el maestro y el estudiante. Por esta razón, los procesos educativos, el trabajo hacia la mejora de los procesos y los efectos de estos procesos son importantes en términos de aprendizaje y enseñanza.

³² Near East University, Ataturk Education Faculty, Mersin 10, Turkey. Email: dgulyuz@yahoo.com

³³ Near East University, Ataturk Education Faculty, Mersin 10, Turkey. Email: Behcet.oznacar@neu.edu.tr

Palabras claves: Ingeniería de Sistemas, Tecnología, Motivación del Estudiante, Cambio en la Educación, Procesos de Gestión.

Resumo

A relevância do estudo é mostrar os benefícios dos processos de digitalização e gestão para a educação dentro da engenharia de sistemas. O impacto do modelo de engenharia de sistemas no gerenciamento de escolas é um processo abrangente que permite a tomada de decisões com base em fatos com um processo lógico e técnicas analíticas para os problemas mais exigentes do sistema. Seminários foram realizados para realizar esta pesquisa. Pré-teste e pós-teste foram aplicados no estudo e os resultados foram avaliados. Tentou medir a eficácia dos seminários na mudança de educação. Pretende-se compreender o efeito do processo de engenharia de sistemas na gestão escolar. As áreas e subcampos relevantes da engenharia do sistema também estão incluídas. Relacionamentos diretos entre as variáveis de motivação, participação e sucesso que afetam a relação entre professor e aluno foram encontrados. Por essa razão, os processos educacionais, o trabalho para melhorar os processos e os efeitos desses processos são importantes em termos de aprendizado e ensino.

Palavras-chave: Engenharia de Sistemas, Tecnologia, Motivação Estudantil, Mudança na Educação, Processos Gerenciais.

Introduction

The technological developments we have experienced in the 21st century have affected both our lives and education. It is inevitable to feel the effect of technology in education as it is in every field. System Engineering is an engineering field that discusses how to organize and manage complex systems throughout life. System engineering, which is used in large projects, examines and discusses management, technical equipment and human relations in many different forms in things. Therefore, when it is being considered from this point of view, today's education should be restructured with the contributions of system engineering according to the requirements of digitalization by re-observing the increase of technology and digitalization. In this process; school management, managers, teachers, and all employees should be evaluated as a whole. They should be assessed by their compliance with the work they perform, their contributions to the institution they are in, and their alignment with technology.

An increase in technology is an important factor that arouses the need for system engineering. The purpose of this system is; to create a system that works efficiently so that it can keep up with the ever changing and evolving technology (Chase, 2009).

Nowadays, the development of digital communication and the taking of digital elements in our lives; Google, Facebook, Twitter, Mail, E-school, E-Book, Whatsapp, Viber etc. the use of social networks such as the Internet, and every move we make using them has shaped digital education. According to the article published by the Turkish Educational Association, the word "digital" entered our language in 1988. Rapid development and changes in technology have influenced many fields as well as the education sector. Methods and techniques which have been used for thousands of years in education have begun to give place to technology and digitalization.

In today's world, the use of technology in education and education are the two concepts that cannot be thought independently (Simon, 1983).

Wells reported that the education system in the United States does not contain much high-tech and related products. It is a complex social system consisting primarily of politics and people. In terms of the number of components and people, the US education system is one of the most complex systems on the planet. Thus, the confusion in the American education system has made it possible to create a standard system and to switch to information systems in order to prevent the problems that may arise. This system

was first proposed by Raytheon CEO Bill Swanson (Wells et al, 2007).

The purpose of the proposal was that it has been believed that system engineering methods which were used to create complex aviation and military systems for the US government could be applied to the US education system. The practice that started in this way became more and more necessary when technology entered our life so intensely.

Initially, information and communication technologies were introduced to students in schools, and the goal was to give them the technological skills they would use throughout their lives. However, later it took its place in schools for information, learning and education. The question that needs to be asked is; what benefits does digital education provide to students? When digital education is used correctly and consciously, it increases the learning speed of the students and offers everyone the opportunity to learn and get information in the same place. In addition, since students can benefit from this service in schools, especially students who are not in good economic condition can easily access the information they want.

While digital education providing flexibility to students and teachers to reach information in every field easily and instantly, we should also be aware of the negative effects it may have. Unfortunately, our children are faced with a threat of digital education to their health every day. The research that the Lightning Research Center has conducted on this subject has found that sleep disorders, diabetes, obesity, and cancer in children are the result of more than two hours of daily light from electronic devices. Despite knowing all this, technology has become our everything and it is inevitable not to use it. Thus, when it is viewed in this way, it can be seen that digitalization in education is creating opportunities while on the other hand, it is creating threats.

Also, the country in which the students are educated and the economic situation of that country is very important because a country with a high income level offers different technological opportunities to its students and educates more successful students whereas, same response cannot be given and cannot be expected in other countries from students where the income level is low. One of the most important areas where technology is used for the future of a society is education and training. Because of this, all

societies are trying to use technology in the most effective way in order to give a good and quality future to their people. Undoubtedly it is the developed countries that can do this in the best way (MEB, 2004).

Elements of Digital Education

Teacher: In recent years, technology has entered our lives so intensely. Therefore, new teacher candidates need to adapt themselves to the technology that is developing every day, and they need to incorporate technology into the education and training program they will present to their students throughout the education year. Today, as our students use computers, laptops, internet and smart phones all the time, it is inevitable that prospective teachers who cannot adapt to them or meet expectations can face some problems and difficulties. Therefore, teachers should constantly improve themselves in order to prevent these problems and try to follow all the innovations (Erdemir et al, 2009). However, as a result of the surveys conducted, it is still seen that our country does not provide all the students and teachers with the necessary facilities, our schools and classes do not have sufficient technical equipment and we are not at the desired level as it is in many developed countries. Our teachers are still familiar with the old methods and techniques that they have been using for years and have not been able to change any of them. They have tried to keep the lessons in the same way in the 21st century and in this regard, they do not have sufficient equipment. Our teachers are lacking technological knowledge and skills (Kaya and Yilayaz, 2013). Another factor that should not be forgotten is that no matter how much technology develops, it can never replace teachers. It is also known that effective learning takes place when students and teachers interact together with a higher motivation. For this reason, teachers have serious responsibilities and duties in this regard. The philosophy of "lifelong learning", which is one of the lessons of the teaching profession, must be adopted constantly and acted in consciousness.

What does life-long learning mean? According to the definition of the European Commission, "Individuals are required to meet and survive every difficulty of life, as well as having the knowledge and skills necessary for them to continue their lives (European Commission, 2000). Lifelong learning skills mean; having communication competence, foreign language knowledge and learning ability, adapting to basic

skills and innovations in science and technology, using digital competence and technology in learning-teaching areas, meeting social citizenship initiatives and complying with social norms.

In short, teachers should be a model to their students and should guide their student. For this reason, they must constantly renew their knowledge and develop their knowledge in order to do so. Looking at the whole world, it is seen that the education system in Finland is very successful and the teachers there are being referred as the best teacher candidates as a result of the education they have taken for 5-6 years since they are very qualified and knowledgeable (Yanpar, 2009).

Student: While technology has entered our lives in all areas and caused changes in many things it is undoubtedly causes major changes in students' lives. In developed countries, technology is used at every stage of the education field, while students in undeveloped countries are far behind it. Technological developments in the globalized world have first entered education with computers and then have become inevitable with new teaching techniques and many technological tools such as the internet, smart board and i-pad.

With technology taking place in the lives of students, students began to learn more easily and more practically, developed their ability to think more, their learning became faster and easier to access any information, libraries left their place to internet to carry out any research. In short, it has been very effective on students' success.

Student learning profile with classical methods has left its place to a new generation students learning with visuals. This has led to a positive increase in the learning desires of the students. In addition, the technological tools that are remarkable for the students offer them opportunities to have fun in the classroom. Asan reported that besides these positive effects, negative effects of digital education are too sensitive to be overlooked (Asan, 2016).

- First of all, the number of students in the class is very important. The number of students should be re-organized by re-observing that everyone can benefit equally.
- Technological tools; smart board, etc. should be kept at the distance that students can touch.

- The technology that is decided to be used in the classroom should be presented for use only as a service. It must be prevented from going out of purpose. In this regard, students should be controlled in some way.
- While we are encouraging students to like technological tools, they should be prevented from becoming usage dependent. Both the benefits and the damages must be constantly conveyed to the students by the teachers. In fact, students should be deliberately guided to go to the library if they need to do research.

Of course, there are of course some benefits provided by digitalization in education. It has been put into practice because it has been believed that it can be more productive for students and more successful generations can grow up if blackboards, chalk, book-notebook, tv, video, cassette player, picture and posters leave their place to computers, smart banners and i-pads. With the help of this system teachers are supported in many ways such as being able to enter courses without preparing a lesson plan, to teach lessons, to benefit from online exam questions without preparing exam questions, to evaluate the papers through the system, to give students online feedback. Besides all these, teachers have made it possible for them to develop their knowledge and skills while doing them.

Similarly for students, using visuals allows them to use their brains faster to distinguish between double-choice words while reinforcing their learning efficiency as it helps them make their learning more permanent and reduces the possibility of forgetting what they have they learned so far. According to Alpar, the possibilities provided by digital education give an opportunity for each individual in society to benefit equally, and allow equality in education and all individuals to develop equally as long as they use digitalization correctly. The contribution made by education to all people's improvement is too big to be underestimated (Alpar et al, 2007).

Results

In this part of the study, the findings of the demographic information belonging to the sample group and the results obtained by the analysis of the data obtained for the sub-

problems of the researcher with the appropriate statistical method are included in the findings and comments on these findings are given. Below, the pre-test and post-test results applied in the

seminars held in different topics within the scope of the research are separately expressed in tables.

- Personal Information

Table 1. Frequency distribution according to gender.

| | | F | % |
|--------|--------|----|-----|
| Gender | Female | 16 | 40 |
| | Male | 24 | 60 |
| | Total | 40 | 100 |

In Table 1; According to the gender distribution of the individuals included in the survey, 16 were women (40%) and 24 were men (60%).

Table 2. Frequency distribution according to relationship status

| | | F | % |
|----------------|---------|----|------|
| Marital Status | Married | 27 | 67.5 |
| | Single | 13 | 32,5 |
| | Total | 40 | |

In Table 2; 67.5% (27) of the participating individuals were married, 32.5% (13) were single.

Table 3. Frequency distribution according to job status

| | | F | % |
|-----|---------|----|------|
| Job | Manager | 15 | 37,5 |
| | Teacher | 20 | 50 |
| | Other | 5 | 12,5 |
| | Total | 40 | 100 |

In Table 3, 37.5% (15) of the individuals in the survey were managers, 50% (20) were teachers and 12.5% (5) were dealing with other jobs.

Table 4. Frequency distribution according to fields.

| | | F | % |
|----------------|-----------|----|------|
| Field (Branch) | Verbal | 17 | 42,5 |
| | Numerical | 13 | 32,5 |
| | Other | 10 | 25 |
| | Total | 40 | 100 |

As understood in Table 4; 42.5% (17) of the participating individuals were in verbal, 32.5% (13) and 25% were in other fields (10).

- Pre-test and Post-test Findings: Pre-test questions assessing seminar studies for School Stakeholders' regarding Digitalization and Management Processes in education.

Question 5. Factors that give individuals who have digital citizenship behavior

Table 5. According to participants factors contributing to this situation for individuals who have digital citizenship behaviors.

| Theme | Manager | | Teacher | | Other | | Total | |
|--|---------|-------|---------|-----|-------|------|-------|-----|
| | N | % | N | % | N | % | N | % |
| Being young generation and growing with technology | 12 | %80 | 15 | %70 | 5 | %100 | 32 | %80 |
| Graduating from higher educations service | 8 | %53.3 | 10 | %50 | 2 | %40 | 20 | %50 |
| Living continuously with technology and being part of it | 9 | %60 | 11 | %55 | 4 | %80 | 24 | %60 |
| Getting trained in and being aware of updated systems | 7 | %60 | 5 | %25 | 4 | %80 | 24 | %60 |

Participants' views;

Young people are more knowledgeable about the use of technology and are able to adapt to new developments more quickly, so they should have appropriate behavior for digital citizenship (P18).

It is aimed to increase the quality of education in order to provide more effective education in accordance with the current needs during the period of higher education (Y13).

Question 6. Tools used in digital education

Table 6. The education system is digitalized; the views of participants about what tools are commonly used in digital education.

| Theme | Manager | | Teacher | | Other | | Total | |
|-------------------|---------|-------|---------|------|-------|------|-------|-------|
| | N | % | N | % | N | % | N | % |
| Computer | 15 | %100 | 20 | %100 | 5 | %100 | 40 | %100 |
| Smart Phone | 12 | %79.2 | 13 | %65 | 1 | %20 | 26 | %65 |
| Intelligent Board | 13 | %85.8 | 15 | %75 | 1 | %20 | 29 | %72.5 |
| Photocopy Machine | 11 | %72.6 | 14 | %70 | 3 | %60 | 28 | %70 |
| Internet | 14 | %92.4 | 17 | %85 | 3 | %60 | 34 | %85 |
| Usb | 7 | %46.2 | 8 | %40 | 1 | %20 | 16 | %40 |

Participants' views;

The digital citizenship issue needs to be kept on the agenda in order to ensure that the education systems are managed correctly and reliably due to the digitalization (Ö2).

Technological leadership is needed in order to be able to provide control and direct digital media in the right way in the education system (D4).

Technology is needed to be accepted to be used in the first place in educational institutions' (D1).

As seen in Table 8, "In digitalized education, 4 competencies are important for management. The most important of these and the most preferred is technology. All participants agreed on technology leadership. Then, effective

leadership, open leadership and, finally, digital citizenship follows. When the administrative group is examined; it can be seen that the acceptance of technology is the most and open leadership is the least coming concepts among the 4 competencies. In the case of teachers, open leadership and technology adoption take the first place. Digital citizenship is seen the least. In the other participants, technological leadership and technology acceptance have the highest number whereas; digital citizenship, which is different, is attracting interest among other participant groups.

- Final Test Questions in assessing seminar studies for School Stakeholders' regarding Digitalization and Management Processes in education.

Table 9. Types of leadership required for the management of digital age.

| Theme | Manager | | Teacher | | Other | | Total | |
|------------------------|---------|-------|---------|-----|-------|-----|-------|-------|
| | N | % | N | % | N | % | N | % |
| Technologic leadership | 4 | 26.4 | 8 | %40 | 2 | %20 | 14 | %35 |
| Open leadership | 13 | %85.8 | 18 | %90 | 4 | %80 | 35 | %87.5 |
| Digital leadership | 7 | %46.2 | 3 | %15 | - | - | 10 | %25 |
| Democratic leadership | 10 | %66.6 | 13 | %65 | 3 | %60 | 26 | %65 |

Participants' views;

Digital leadership and technological leadership skills are required for good and controlled use of technology and managing it effectively in the digital age (Ö12).

Democratic leaders are needed for everyone to have the same use of technology so that the use of technology can be controlled and maintained on equal terms (D1).

When Table 9 is examined, according to participants, it is seen that the type of leadership is needed in the digital age. Teachers have stated this opinion the most. Similarly, administrators thought the same for the concept of open leadership. In the other participant group, similar results were obtained. Teachers and other participating groups are not seen much in the concept of digital leadership. The fact that participants from other groups do not talk about the concept of leadership is another striking feature.

Discussion

In this research, it is aimed to examine the contribution of digital technology to education and school management for the purpose of increasing quality in them.

In this study, how much young people are aware of the effects of digital technology and their adaptation to the rapid developments that the time brings to them are examined. The vast majority of studies on this subject involve the findings and discussions on digitalization.

In our study, the evaluation of seminar studies regarding digitalization and management processes in education for school stakeholders' and the factors that have contributed to the individuals who have digital citizenship behaviors were investigated. As a result of the research, it has been determined that young people use digitalization effectively and are adapting to it immediately. According to the result of digitalization and management processes seminar studies, using technology in education has a positive effect. As a result of measuring the differences between individuals who have digital citizenship behaviors, the young and technology-driven generation findings are obtained high. Bakır conducted a survey of classroom teacher candidates' perceptions of digital citizenship and its sub-dimensions. As a result Bakır's study, it is observed that teacher candidates generally have higher levels of digital citizenship. Findings from

interviews and observations made with teacher candidates were found to be consistent with the responses given by teacher candidates. This may be due to the fact that prospective teachers are not aware of a number of technological developments. The results of our findings and Copper's study seem to be overlapping. In his study, Bakır, defined digital citizenship as a citizen who can criticize when using information and communication resources, who knows the ethical consequences of online behavior, makes online moral decisions, does not abuse technology, encourages correct behavior when communicating and collaborating in the digital world (Bakır, 2016).

In this research, participants views about some of the tools commonly used in digital education were taken. For this reason, in the survey carried out computer, smart phone, smart board, copier, internet and usb options are included. In the survey results, the computer ranks first with a high percentage. The use of USB is seen as the least used. There are evaluations of digital educational tools in terms of their relationship with technology. Kaya studied the relationship between classroom teachers' attitudes towards technology use in education and their attitudes towards the profession. In this study, there was a positive relationship between the attitudes of classroom teachers to the use of technology in education and self-efficacy perceptions related to technology, their reflection on teaching processes, self-improvement and classroom management sub-dimensions (Kaya, 2017). Although we did not find any significant difference between the variables in the study on the opinions of Tuncer and Tanaş, Tuncer and Özüt, Kahraman, Şad and Nalçacı (Tuncer and Tanaş, 2011; Tuncer and Özüt, 2012; Kahraman et al, 2013; Şad and Nalçacı, 2015). It is determined that there are statistically significant differences in the studies done by Şahin, Topal and Akgün (Şahin and Göker, 2013; Topal and Akgün, 2015).

When we examine the importance of education management in the digital age table, the first point that draws attention is that management is a remarkable point in order to provide the right service. Apart from this, some themes are formed in order to be able to use technology in order to benefit from time and reach information as quickly as possible and finally to obtain new and reliable information. The digitalization processes of institutions and the right steps that are needed in this process to get maximum

benefit from digitization is very important. Similarly, in Taşkıran's work, there is a view that institutions should take the right steps in the digitalization processes and follow the modern time without lagging behind it (Taşkıran, 2017). According to The 2018 Digital University (2016), in the digitalization process it is also important for the administrators to implement their management methods and practices for the development of institutions to be more quickly and efficiently (The 2018 Digital University: Staying relevant in the digital age 2016).

When we look at the competencies that are considered to be important for management within the digitalized education system, technology adoption, technological leadership, effective leadership, open leadership and digital citizenship appear. One of the most remarkable points here is the technology leadership which needs a remarkable understanding in the management processes. A large number of participants indicated that technology leadership should be within the process of digitalizing education. In Davies' study, it has been expressed that technology leadership has an impact on a wide range of areas that cannot be represented as fixed and singular leadership processes when all schools are considered. It appears that technology leadership is closely related to a management process that will provide positive contributions to the goal of convergence and convergence of schools in the management process (Davies, 2010).

When we look at the other table, we see the concept of open leadership first in the leadership types required for digital age management. After this, democratic leadership, technological leadership and digital leadership concepts seem to have arrived. According to participants, the open leadership is said to be the most necessary type of leadership for managers in the digital age. As mentioned in Polat and Arabacı, despite the fact that the concept of open leadership is a new concept in the literature, it is different as it emphasizes the importance of taking into consideration the process of close relations between individuals in today's conditions.

Conclusion

Within the scope of the research, the effects of system engineering on teachers and managers and the level of technology usage were examined. As a result of the research it was concluded that the use of technological devices

or technological materials facilitated the learning of learners. It was also found that educational intuitions are finding the intelligent boarding systems very convenient to use and therefore, computers are being the most used. Also, it has been found that USB was very useful when the documents in the education system were being moved from one place to another and wanted to share among people.

Wang stated that teachers lacked a good BTMM program for digital technological resources and their use. Similarly, Wang emphasizes that a good program for ITMM education is mandatory, but unfortunately it is incomplete (Wang et al, 2011). This is a similar situation in the schools of North Cyprus. For this reason, seminars should be held to raise awareness of the people involved. When we look at the time we are living, the use of technology provides us with both convenience and many advantages because we can access every kind of information practically with technology. When we study the education system, we see that the digitalization is accepted and that the most used digital product is computer and the least used is usb. Therefore, in the digitalized education system, when the management staff of the schools is examined, it is necessary for the individuals to be competent about the leadership of the ret ecology first. Accordingly, it is often said that administrators have a major role in increasing school success. The healthy communication that the administrators will engage with the students will prepare the infrastructure for the students' to participate in the lessons or any activity more efficiently and be more motivated.

Hence, for teachers to be happy while working and doing their job nicely and well is only possible with good motivation. The motivation of the teachers is very important both for the motivation of the students in the class and for the educational reforms which can be realized at advanced level. The awarding of teachers is affecting the efficiency of the work they do significantly. Managers need to contribute to improve teacher motivation because they have to be successful in their work life; their degree of satisfaction is based on the equals and inequalities applied in the workplace. This is possible today with the use of technology. The educational system that keeps pace with the time always leads the teachers and students to success. All aspects of the management processes are carried out successfully and in a healthy manner in terms of teachers and managers regarding the realization level of management processes.

Teachers and managers share the same view on the level of functioning of decision-making, planning, organizing, communication, and coordination dimensions but there are differences in opinion because the teachers perform the work in terms of the order of management processes on the effect and evaluation dimensions. The managers control the work done. There is a difference between the views of the teachers and the managers, but they both express the level of realization of the management processes positively.

System Engineering has emerged as a result of an effort to evaluate the theories developed for all branches of science. The system concept consists of a set of specific sub-units associated with each other and with their environment that can be defined as a whole which is associated with its periphery and is a part of an upper whole. The concept of the system can provide a better understanding of the phenomena and phenomena being examined, as well as the whole of the phenomena and events studied. When such an approach is taken into a consideration, any structure, event, activity and concept consisting of unified and integrated parts can be considered as a system. The system approach makes it possible to see all the variables that make up and affect the organization together. It can be said that the most important feature that distinguishes system theory from classical theories is its emphasis on organization and environment interaction.

In this study, it can be seen that the positive rate is higher when we look at questions such as school sharing, change in education and management processes, pre-test and post-test questions.

A lot of research has been done on the subject. In this context, we can see that female individuals show less participation than male individuals when considering the gender distribution of individuals participating in such research. It can be said that married individuals tend to participate more in research than single people. Most of the participants are teachers and administrators. We see that the education system is very different from the old one. In this context, we can say that the biggest change is the Technology. The fact that technology is so advanced in today's conditions provides us with so many benefits. It seems important to use digital leadership and technological leadership

skills to manage technology in a good and controlled way in the digital age.

Democratic leaders are also needed to ensure that everyone has the same use of technology so that the use of technology can be controlled and maintained on equal terms. As a result of the research conducted, according to participants, it is seen that what is needed in the digital age is the type of leadership. This opinion is most expressed by the teachers. Likewise, administrators mostly talked on the concept of open leadership. In the other participant group, similar results were obtained. Teachers and other participating groups do not seem to focus much on the concept of digital leadership. The fact that participants from other groups do not talk about the concept of leadership is another striking feature.

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