



## The Impact of School Principals' Digital Leadership Level on Learning Organization and Teachers' Self Leadership Skills\*

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### ABSTRACT

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The purpose of the study is to examine the impact of school principals' digital leadership level on the learning organization and teachers' self-leadership skills. The study is quantitative and the correlational model was used. Three scales were used: Digital Leadership Scale, Learning Organization Scale and Self-Leadership Scale. 802 high school teachers in the city of Çanakkale in Turkey were reached. SPSS and AMOS programs were used in the analysis of the data. Data were normally distributed. ANOVA Test, t-Test, and Regression analysis were applied. According to the study results; the teachers' perceptions of digital leadership, learning organization and self-leadership were at a good level. Some differences were detected in the perceptions of teachers regarding digital leadership, learning organization and self-leadership according to the teachers' gender, school status, education status, school type and seniority. The digital leadership level of school principals positively affects schools becoming learning organizations and teachers' self-leadership. Suggestions have been presented for school principals to develop their digital leadership skills so that schools can be more successful in the rapidly changing and developing education age. School principals should positively motivate teachers, students and parents for digital transformation in education.

**Keywords:** Digital leadership, learning organization, self-leadership, teacher, school principal

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## 1. INTRODUCTION

As the world is rapidly changing, education systems also need to develop positively in parallel with this change. The Turkish Education System emphasizes adapting to innovations and continuous development (Milli Eğitim Temel Kanunu, 1973). Thus, the integration of digital technologies into education is becoming inevitable. Having educators equipped with digital skills in schools today is becoming increasingly important.

Digitalization and globalization fundamentally affect the business world. New skills are emerging at the core of professions (OECD, 2024). Therefore, digitalization in education is crucial for equipping students with digital skills appropriate for today's professions, so they can more easily find employment in the future.

A school leader is one of the most important elements for a school to achieve its goals. School principals today must possess digital leadership skills (Öz, 2020: 45). Digital technology affects school administration not just in one aspect, but in every aspect (Kaya, 2022: 2). Digital leadership is among the indispensable qualities for organizations to be successful (Çelik Şahin et al., 2020: 271). Digital technologies affect not only school administration but also teachers and students. Students must learn to use digital tools correctly and effectively. With all these developments in the digital age, digital leadership is important for today's educational institutions (Aydın, 2022: 2). During the Covid-19 pandemic, digital leadership has positively contributed to teachers' integration of technology in education, thus once again demonstrating the importance of digital leadership for schools (Neyişçi & Sarı, 2023: 520). Thus, it can be said that digital leadership is quite vital in our age and positively impacts schools.

Learning organizations focus on continuous improvement in the organization, the development of organization members, and creating a learning culture (Senge, 1990). A learning organization is a part of the organizational culture and affects the outputs

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of an organization and contributes positively to its performance (Yılmaz, 2024: 26). Şahin (2023) found a positive relationship between twenty first century skills usage by teachers and the learning school in his study. Therefore, since learning organizations show positive change and development according to the requirements of the age, these organizations are likely to be more successful.

To perform better in the self-leadership process, individuals direct and influence themselves using effective strategies (Manz, 1986; Neck & Manz; 1992; Neck & Houghton, 2006; Haisten, 2008). Self-leadership helps employees perform their tasks effectively and reduces emotional difficulties about loneliness in the workplace. In addition, self-leadership supports and improves the psychological well-being of employees (Güven, 2024: 128). People who are good at self-leadership can solve problems in a better way (Wang et al., 2016). People with weak self-leadership skills may have difficulty coping with problems and setting the right goals (Unsworth & Mason, 2012). It can be said that Individuals who have enough self-leadership skills are more effective in their jobs and feel better about themselves. Güven (2024) emphasized in his study that if the self-leadership is accepted as important and its development is enabled, people can develop their self-leadership skills, contribute to individual and institutional welfare, and contribute to sustainability. Erkoyuncu (2023), Göksoy et al., (2014) and Fidan (2019) found that teachers' self-leadership levels are high in their studies. Goldsby et al. (2021) found that the most researched categories related to self-leadership were education, psychological empowerment, job satisfaction, external leadership, creativity/innovation, ethics, stress/anxiety, and emotional regulation. Uzman & Maya (2019) found in their studies that the usage of self-leadership techniques is positively correlated with self-esteem and life satisfaction.

The use of digital tools in today's and future educational institutions is gaining importance every day. Therefore, school administrators need to ensure the digital transformation of their schools. Today's school principals need to use digital tools not only in education and training, but also in management processes and teacher development. This study is about how the digital leadership levels of school principals affect the learning organization, which is a management process, and the teachers' self-leadership skills. It is thought this study will reveal innovations in education management processes and contribute to schools, school principals and teachers' adaptation to digital technologies. This study can bring useful suggestions about education for policy makers, practitioners and researchers.

### **1.1. Statement of the Problem**

One of the most important concepts in defining leadership is influence. Some leaders lead by serving their employees, some as ethical role models, and some use digital tools effectively to transform their organizations, and these leaders achieve their goals. The twenty first century is regarded as the information and digital age. Therefore, organizations must keep up with technological change. Technological change affects the entire system of an organization and forces it to be a learning organization. These changes, which affect all organizations, also affect educational institutions (Aydın, 2022: 1-2). With these changes, it is expected that the integration of digital elements into schools will contribute to schools becoming a changing and developing learning school and to the development of teachers themselves.

When the COVID-19 pandemic first appeared, important measures have been taken by countries such as limiting international flights, closing crowded places (cafes, theaters, cinemas, etc.) and suspending face-to-face education. These measures have changed people's lives significantly (Erçetin et al., 2020: 36). Thus, technology education has gained importance in education and schools have gradually begun to be replaced by distance education. With the pandemic, digital elements have come to the fore. During the pandemic, education has been reorganized with technology support. The basic functions of schools have been changed and school leaders have been directed to these technological changes (Harris, 2020: 321). The need for the use of technological methods in education and for school principals to be knowledgeable and curious about technology has emerged (Harris & Jones, 2020: 245). Thus, digitalization in education has become even more important since the pandemic.

With its constant impact on education, technology is a part of today's learning, so school principals should not ignore technology. Our age is the digital age, and in this age, school principals should use technology to encourage the transformation of the school, create a sustainable digital learning culture, and manage the school through digital leadership (Zhang, 2017: 37). Digital leaders positively affect employees' achievement of digital goals and institutional performance (Sağbaşı & Erdoğan, 2022: 31). In other words, it seems inevitable that digital leadership should be implemented in schools so that school principals can meet the requirements of the age.

In a study in India, it was determined that creating and coordinating digital leadership programs in schools improved teachers' digital skills and positively affected students' academic success (Tanti & Sethupathy, 2022: 36). In a study in the banking in Turkey, it was found that digital leadership positively affected the learning organization and individual performance (Artüz, 2020: 93). In a study conducted in the capital of Turkey on the digital management of schools, it was determined that schools were managed digitally in all aspects and were gradually becoming digital (Kaya, 2022). National and international studies on digital leadership are gradually increasing, but study conducted in educational organizations is quite limited. In addition, no study has been found on digital leadership, learning organization and teachers' self-leadership, and this original study can contribute to especially the education field.

## 1.2. Purpose of the Study

The purpose of this study is to ask whether there is a significant relationship between the digital leadership of school principals and the level of schools being learning organizations and teachers' self-leadership skills. It is also aimed to make suggestions for schools to adapt to digital technologies more easily, schools to be changing and developing learning organizations and to contribute to teachers' self-leadership skills.

## 1.3. Problem of the Study

The problem of the study consists of "Is there a significant relationship between the digital leadership of school principals and the learning organization of schools and the self-leadership of teachers?"

### 1.3.1. Sub-problems of the study

1. What are the perceptions of teachers regarding digital leadership, learning organization and self-leadership?
2. Is there a significant difference in teachers' perceptions regarding digital leadership, learning organization and self-leadership according to teachers' gender, school status, education status, school type and seniority?
3. Is digital leadership a significant predictor of schools becoming learning organization?
4. Is digital leadership a significant predictor of teachers' self-leadership?

## 2. METHODOLOGY

### 2.1. Study Design

This study is quantitative and the correlational model was used. In correlational model, the relationship between two or more variables can be examined statistically (Creswell & Guetterman, 2021: 45, Şimşek, 2018: 92). The relationship between digital leadership and the learning organization and teachers' self-leadership skills was examined. Three (3) scales were used: Digital Leadership Scale, Learning Organization Scale and Self-Leadership Scale. Details about the scales are shown below.

The Digital Leadership Scale was developed by Büyükbeşe et al., (2022) and consists of a total of nine (9) questions with two (2) dimensions (Questions 1, 2, 3, 4, 5, 6 Innovative Dimension, Questions 7, 8, 9 Supportive Dimension). The Learning Organization Scale (LOS) was developed by Baydar (2021) and consists of a total of sixteen (16) questions in 3 dimensions (Questions 1, 2, 3, 4, 5, 6, 7 Organizational Learning, Questions 8, 9, 10, 11 Innovative Learning, Questions 12, 13, 14, 15, 16 Visionary Learning). The Self-Leadership Scale (SLS) was developed by Tabak et al. (2012). The scale consists of a total of 29 questions in 8 sub-dimensions (Questions 1,2,3,4,5,6,7 Imagining Successful Performance by Setting Goals for Yourself; Questions 8,9,10 Self Talk; Questions 11,12,13,14 Evaluating Thoughts and Ideas; Questions 15,16,17,18 Self Observation; Questions 19-20 Setting Reminders; Questions 21,22,23,24 Self Punishment; Questions 25,26,27 Self Rewarding; Questions 28-29 Focusing Thoughts on Natural Rewards). The Self-Punishment sub-dimension is reverse scored. The scales' questions in are in 5-point Likert.

### 2.2. Population

The sample should represent the characteristics of the universe (Tabachnick & Fidell, 2001). The universe of this study consists of teachers from Çanakkale city in Turkey, and the sample consists of a sample group selected from teachers working in the city center and districts of Çanakkale according to the representation rate of the districts in the province. In the 2022-2023 academic year, there are a total of 393 schools and 5667 teachers working at all school levels in Çanakkale. At the high school level, there are a total of 81 high schools, 65 of which are state high schools and 18 are private high schools. 2490 teachers were determined in all high schools in Çanakkale city (MEB, 2022). Simple random sampling method was used due to its easy accessibility during the sampling. When the difficulties to be encountered in the data collection process of the study were considered and in order not to fall below the determined sample size, a total of 802 people were reached.

### 2.3. Data Analysis

Before the data collection process began, the ethics committee permission from Çanakkale Onsekiz Mart University Ethics Committee (Date 16.02.2023, no 02/44) and the implementation permission from Çanakkale Provincial Directorate of National Education were obtained. Three (3) scales were used: Digital Leadership Scale (Büyükbeşe et al., 2022), Learning Organization Scale (Baydar, 2021) and Self-Leadership Scale (Tabak et al., 2012). 802 teachers working in high schools throughout Çanakkale were reached. The analysis was conducted using AMOS and SPSS tools.

### 2.4. Participants

These findings include distribution of teachers by gender, status of school, type of high school, senior and status of education of the teachers. The demographic variables of participants are examined. The findings of the study are shown in Table 1.

Table 1.

*Distribution of Teachers by Gender, Status of School, Type of High School, Senior and Status of Education*

| <b>Gender</b>              | <i>f</i> | %    |
|----------------------------|----------|------|
| Female                     | 465      | 58   |
| Male                       | 337      | 42   |
| <b>Seniority (Years)</b>   | <i>f</i> | %    |
| 1-5                        | 60       | 7,5  |
| 6-10                       | 145      | 18,1 |
| 11-15                      | 131      | 16,3 |
| 16-20                      | 107      | 13,3 |
| 21-25                      | 180      | 22,4 |
| 26- over                   | 179      | 22,3 |
| <b>Status of Education</b> | <i>f</i> | %    |
| Bachelor                   | 602      | 75,1 |
| Postgraduate               | 200      | 24,9 |
| <b>Status of School</b>    | <i>f</i> | %    |
| Public                     | 702      | 87,5 |
| Private                    | 100      | 12,5 |
| <b>Type of High School</b> | <i>f</i> | %    |
| Anatolian                  | 373      | 46,5 |
| Science- Social            | 162      | 20,2 |
| Vocational                 | 195      | 24,3 |
| Imam Hatip                 | 72       | 9,00 |
| <b>Total</b>               | 802      | 100  |

Table 1 shows that 58% of the teachers are female and 42% are male; 7.5% have 1-5, 18.1% have 6-10, 16.3% have 11-15, 13.3% have 16-20, 22.4% have 21-25 years of seniority, and 22.3% have 26 years or more of seniority. It is seen that 75.1% have a bachelor's degree and 24.9% have a postgraduate degree; 87.5% work in public schools and 12.5% in private schools. It is also seen that 46.5% work in an Anatolian high school, 20.2% in a Science and Social Sciences high school, 24.3% in a vocational high school, and 9% in an Imam Hatip high school.

## 2.5. Validity

Digital Leadership Scale, the Learning Organization Scale and the Self-Leadership Scale were used in the study. The validity values for the responses to these scales were examined. These validity values are shown in Table 2.

Table 2.

*Validity Values*

| <b>Scales</b>               | <b>CMIN/DF</b> | <b>GFI</b> | <b>CFI</b> | <b>RMSEA</b> |
|-----------------------------|----------------|------------|------------|--------------|
| Digital Leadership Scale    | 4.717          | 0.970      | 0.989      | 0.068        |
| Learning Organization Scale | 4.941          | 0.931      | 0.973      | 0.070        |
| Self-Leadership Scale       | 3.268          | 0.911      | 0.924      | 0.053        |

According to Table 2, the structural validity of the Digital Leadership, Learning Organization and Self-Leadership scales was checked with CFA based on the maximum likelihood estimation method. In this process, goodness of fit values such as CMIN/DF, GFI, CFI, RMSEA were examined. According to the results obtained, the values were found as Digital Leadership Scale (CMIN/DF: 4.717, GFI: 0.970, CFI: 0.989, RMSEA: 0.068), Learning Organization Scale (CMIN/DF: 4.941, GFI: 0.931, CFI: 0.973, RMSEA: 0.070) and Self-Leadership Scale (CMIN/DF: 3.268, GFI: 0.911, CFI: 0.924, RMSEA: 0.053). These determined values show that the goodness of fit of the scales is at accepted levels (Gürbüz, 2021: 38; Yaşlıoğlu, 2017: 80-81). In other words, the model is acceptable and compatible with the data.

## 2.6. Reliability

The responses given to the Digital Leadership Scale, the Learning Organization Scale and the Self-Leadership Scale were analyzed. The values of these scales were tested by using Cronbach's Alpha. The results are shown in Table 3.

Table 3.

*Cronbach's Alpha values*

| <b>Scales and Dimensions</b>    | <b>Number of Items</b> | <b>Cronbach's Alpha</b> |
|---------------------------------|------------------------|-------------------------|
| <b>Digital Leadership Scale</b> | 9                      | 0.96                    |
| Innovative                      | 6                      | 0.94                    |
| Supportive                      | 3                      | 0.94                    |

|  |    |      |
|--|----|------|
| <b>Learning Organization Scale</b>                             | 16 | 0.97 |
| Organizational Learning  | 7  | 0.95 |
| Innovative Learning  | 4  | 0.92 |
| Visionary Learning   | 5  | 0.94 |
| <b>Self-Leadership Scale</b>                                   | 29 | 0.86 |
| Imagining Successful Performance by Setting Goals for Yourself | 7  | 0.83 |
| Self-Talk  | 3  | 0.78 |
| Evaluating Thoughts and Ideas                                  | 4  | 0.75 |
| Self-Observation   | 4  | 0.79 |
| Setting Reminders  | 2  | 0.80 |
| Self-Punishment  | 4  | 0.86 |
| Self-Rewarding   | 3  | 0.88 |
| Focusing Thoughts on Natural Rewards                           | 2  | 0.63 |

Table 3 shows the Cronbach's Alpha reliability values of the responses given by the participants to the scales. Alpha values of 0.96 were found for Digital Leadership Scale in general, 0.94 for the Innovative and 0.94 for the Supportive. Alpha values of 0.97 were found for Learning Organization Scale in general, 0.95 for the Organizational Learning, 0.92 for the Innovative Learning, and 0.94 for the Visionary Learning. Alpha values of 0.86 were found for Self-Leadership Scale in general, 0.83 for the Imagining Successful Performance by Setting Goals for Yourself, 0.78 for the Self-Talk, 0.75 for the Evaluating Thoughts and Ideas, 0.79 for the Self-Observation, 0.80 for the Setting Reminders, 0.86 for the Self-Punishment, 0.88 for Self-Rewarding, and 0.63 for Focusing Thoughts with Natural Rewards.

High reliability is indicated by Cronbach's Alpha reliability values between 0.81 and 1.00, medium reliability by between 0.61 and 0.80, low reliability by between 0.41 and 0.60, and unreliability by between 0.00 and 0.40 (Kılıç, 2016: 48). In this study, it can be said that the Digital Leadership Scale in general and its sub-dimensions, Learning Organization Scale in general and its sub-dimensions, Self-Leadership Scale in general, Imagining Successful Performance by Setting Goals for Yourself, Setting Reminders, Self Punishment, Self Rewarding sub-dimensions have high reliability. It can be said that the Self-Leadership Scale sub-dimensions such as Self Talk, Evaluating Thoughts and Ideas, Self Observation and Focusing Thoughts with Natural Rewards have medium reliability. The values of the Skewness and Kurtosis about to the Digital Leadership Scale, the Learning Organization Scale and the Self-Leadership Scale are presented in Table 4.

Table 4.  
*Skewness and Kurtosis Values*

| <b>Scales and Dimensions</b>                                   | <b>n</b> | <b><math>\bar{x}</math></b> | <b>Skewness</b> | <b>Kurtosis</b> |
|--|----------|-----------------------------|-----------------|-----------------|
| <b>Digital Leadership Scale</b>                                | 802      | 3.77                        | -0.70           | 0.12            |
| Innovative   | 802      | 3.78                        | -0.70           | 0.17            |
| Supportive   | 802      | 3.76                        | -0.72           | -0.07           |
| <b>Learning Organization Scale</b>                             | 802      | 3.69                        | -0.61           | -0.02           |
| Organizational Learning  | 802      | 3.78                        | -0.72           | 0.19            |
| Innovative Learning  | 802      | 3.55                        | -0.41           | -0.43           |
| Visionary Learning   | 802      | 3.68                        | -0.58           | -0.13           |
| <b>Self-Leadership Scale</b>                                   | 802      | 3.96                        | -0.23           | -0.13           |
| Imagining Successful Performance by Setting Goals for Yourself | 802      | 4.25                        | -0.59           | 0.18            |
| Self-Talk  | 802      | 3.90                        | -0.65           | -0.11           |
| Evaluating Thoughts and Ideas                                  | 802      | 4.25                        | -0.44           | -0.11           |
| Self-Observation   | 802      | 4.26                        | -0.55           | 0.15            |
| Setting Reminders  | 802      | 3.94                        | -0.66           | -0.06           |
| Self-Punishment  | 802      | 2.74                        | 0.13            | -0.57           |
| Self-Rewarding   | 802      | 3.99                        | -0.80           | 0.30            |
| Focusing Thoughts on Natural Rewards                           | 802      | 4.21                        | -0.79           | 0.50            |

According to Table 4, the skewness and kurtosis values are between -2 and +2 in the Digital Leadership Scale, Learning Organization Scale and Self-Leadership Scale and in all sub-dimensions of these scales. If the skewness and kurtosis values are between -2 and +2, it means that the data is normally distributed (George & Mallery, 2020). Therefore, it was understood that the responses given to the study were normally distributed and the t-Test and ANOVA Test from parametric tests were applied in the study.

### 3. FINDINGS

This section includes the findings to explain the sub-problems in the study. The sub problems are about perceptions of teachers regarding digital leadership, learning organization and self-leadership, if there is a significant difference in teachers' perceptions regarding digital leadership, learning organization and self-leadership according to teachers' demographic variables and if there is a significant predictor of schools becoming learning organization and teachers' self-leadership. This section also includes the comments on these findings.

#### 3.1. Findings on the First Sub-Problem

The perceptions of the teachers Digital Leadership, Learning Organization and Self-Leadership were examined in the study. The findings were also commented below. The results about the scales are shown in Table 5.

Table 5.

*Teachers' Perceptions of Digital Leadership, Learning Organization and Self-Leadership*

| <b>Digital Leadership Scale</b>                                | <b><math>\bar{x}</math></b> | <b>sd</b> |
|--|-----------------------------|-----------|
| General  | 3.77                        | 0.95      |
| Innovative   | 3.78                        | 0.94      |
| Supportive   | 3.75                        | 1.06      |
| <b>Learning Organization Scale</b>                             | <b><math>\bar{x}</math></b> | <b>sd</b> |
| General  | 3.69                        | 0.92      |
| Organizational Learning  | 3.77                        | 0.94      |
| Innovative Learning  | 3.55                        | 1.00      |
| Visionary Learning   | 3.68                        | 0.98      |
| <b>Self-Leadership Scale</b>                                   | <b><math>\bar{x}</math></b> | <b>sd</b> |
| General  | 3.96                        | 0.41      |
| Imagining Successful Performance by Setting Goals for Yourself | 4.25                        | 0.54      |
| Self-Talk  | 3.90                        | 0.87      |
| Evaluating Thoughts and Ideas                                  | 4.25                        | 0.54      |
| Self-Observation   | 4.26                        | 0.57      |
| Setting Reminders  | 3.94                        | 0.91      |
| Self-Punishment  | 2.74                        | 0.98      |
| Self-Rewarding   | 4.00                        | 0.89      |
| Focusing Thoughts on Natural Rewards                           | 4.21                        | 0.70      |

According to Table 5, the values in the Digital Leadership Scale are 3.77 ( $\bar{x}$ ) and 0.95 (sd). The values in the Innovative dimension the values are 3.78 ( $\bar{x}$ ) and 0.94 (sd), and in the Supportive dimension the values are 3.75 ( $\bar{x}$ ) and 1.06 (sd). Therefore, it can be said that teachers perceive the digital leadership levels of their school principals at a good level.

The values in the Learning Organization Scale are 3.69 ( $\bar{x}$ ) and 0.92 (sd). The values in the Organizational Learning dimension, the values are 3.77 ( $\bar{x}$ ) and 0.94 (sd), in the Innovative Learning dimension, the values are 3.55 ( $\bar{x}$ ) and 1.00 (sd), and in the Visionary Learning dimension, the values are 3.68 ( $\bar{x}$ ) and 0.98 (sd). According to these findings, it can be said that the perceptions of teachers about the school they work in as a learning organization are at a good level.

The values in the Self-Leadership Scale are 3.96 ( $\bar{x}$ ) and 0.41 (sd). The values in the Imagining Successful Performance by Setting Goals for Yourself sub-dimension the values are 4.25 ( $\bar{x}$ ) and 0.54 (sd), in the Self-Talk sub-dimension the values are 3.90 ( $\bar{x}$ ) and 0.87 (sd), in the Evaluating Thoughts and Ideas sub-dimension the values are 4.25 ( $\bar{x}$ ) and 0.54 (sd), in the Self-Observation sub-dimension the values are 4.26 ( $\bar{x}$ ) and 0.57 (sd), in the Setting Reminders sub-dimension the values are 3.94 ( $\bar{x}$ ) and 0.91 (sd), in the Self-Punishment sub-dimension the values are 2.74 ( $\bar{x}$ ) and 0.98 (sd), in the Self-Rewarding sub-dimension the values are 4.00 ( $\bar{x}$ ) and 0.89 (sd), In the Focusing Thoughts on Natural Rewards sub-dimension, the values are seen as 4.21 ( $\bar{x}$ ) and 0.70 (sd). It can be said that teachers perceive their self-leadership levels at a good level. The highest average value in the sub-dimensions is in the Self-Observation, and the lowest average value is in the Self-Punishment.

#### 3.2. Findings on the Second Sub-Problem

The findings regarding the differentiation of teachers' perceptions of Digital Leadership, Learning Organization and Self Leadership according to teachers' gender, school status, education level, school type and seniority are shown in tables 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24. The t-Test results for the Digital Leadership Scale by gender are shown in Table 6.

Table 6.

*Digital Leadership Scale t-Test Results by Teachers' Gender*

| Digital Leadership | Gender | n   | $\bar{x}$ | sd   | t     | df  | p       |
|--------------------|--------|-----|-----------|------|-------|-----|---------|
| General            | Female | 465 | 3.76      | 0.92 | -0.58 | 800 | p=0.563 |
|                    | Male   | 307 | 3.80      | 0.99 |       |     |         |
|                    | Total  | 802 |           |      |       |     |         |
| Innovative         | Female | 465 | 3.76      | 0.90 | -0.65 | 800 | p=0.519 |
|                    | Male   | 307 | 3.80      | 0.99 |       |     |         |
|                    | Total  | 802 |           |      |       |     |         |
| Supportive         | Female | 465 | 3.75      | 1.04 | -0.41 | 800 | p=0.681 |
|                    | Male   | 307 | 3.78      | 1.09 |       |     |         |
|                    | Total  | 802 |           |      |       |     |         |

Looking at Table 6, it is understood that the responses given by the participants in the Digital Leadership Scale do not differ significantly ( $p>0.05$ ). The responses in the sub-dimensions do not differ as well ( $p>0.05$ ). The t-Test results for the Learning Organization Scale by gender are shown in Table 7.

Table 7.

*Learning Organization Scale t-Test Results by Teachers' Gender*

| Learning Organization   | Gender | n   | $\bar{x}$ | sd   | t     | df  | p       |
|-------------------------|--------|-----|-----------|------|-------|-----|---------|
| General                 | Female | 465 | 3.65      | 0.91 | -1.50 | 800 | p=0.134 |
|                         | Male   | 307 | 3.75      | 0.94 |       |     |         |
|                         | Total  | 802 |           |      |       |     |         |
| Organizational Learning | Female | 465 | 3.74      | 0.92 | -1.17 | 800 | p=0.240 |
|                         | Male   | 307 | 3.82      | 0.95 |       |     |         |
|                         | Total  | 802 |           |      |       |     |         |
| Innovative Learning     | Female | 465 | 3.50      | 1.01 | -1.69 | 800 | p=0.091 |
|                         | Male   | 307 | 3.62      | 1.01 |       |     |         |
|                         | Total  | 802 |           |      |       |     |         |
| Visionary Learning      | Female | 465 | 3.63      | 0.96 | -1.55 | 800 | p=0.121 |
|                         | Male   | 307 | 3.64      | 0.99 |       |     |         |
|                         | Total  | 802 |           |      |       |     |         |

According to Table 7, the responses given by the participants in the Learning Organization Scale do not differ significantly by the gender ( $p>0.05$ ). The responses in the sub-dimensions do not differ as well ( $p>0.05$ ). The t-Test results for the Self-Leadership Scale in general by teachers' gender are shown in Table 8.

Table 8.

*Self-Leadership Scale t-Test Results According to Teachers' Gender*

| Self-Leadership  | Gender | n   | $\bar{x}$ | sd   | t    | df  | p        |
|--|--------|-----|-----------|------|------|-----|----------|
| General  | Female | 465 | 3.99      | 0.40 | 2.80 | 800 | p=0.005* |
|  | Male   | 307 | 3.90      | 0.42 |      |     |          |
|  | Total  | 802 |           |      |      |     |          |
| Imagining Successful Performance by Setting Goals for Yourself | Female | 465 | 4.28      | 0.52 | 1.90 | 800 | p=0.058  |
|  | Male   | 307 | 4.21      | 0.56 |      |     |          |
|  | Total  | 802 |           |      |      |     |          |
| Self-Talk  | Female | 465 | 4.00      | 0.82 | 3.55 | 800 | p=0.001* |
|  | Male   | 307 | 3.78      | 0.93 |      |     |          |
|  | Total  | 802 |           |      |      |     |          |
| Evaluating Thoughts and Ideas                                  | Female | 465 | 4.26      | 0.54 | 4.45 | 800 | p=0.655  |
|  | Male   | 307 | 4.24      | 0.54 |      |     |          |
|  | Total  | 802 |           |      |      |     |          |
| Self-Observation   | Female | 465 | 4.29      | 0.55 | 1.53 | 800 | p=0.627  |
|  | Male   | 307 | 4.22      | 0.60 |      |     |          |
|  | Total  | 802 |           |      |      |     |          |

|                                      |        |     |      |      |       |     |          |
|--------------------------------------|--------|-----|------|------|-------|-----|----------|
| Setting Reminders                    | Female | 465 | 3.96 | 0.92 | 0.66  | 800 | p=0.508  |
|                                      | Male   | 307 | 3.91 | 0.91 |       |     |          |
|                                      | Total  | 802 |      |      |       |     |          |
| Self-Punishment                      | Female | 465 | 2.71 | 1.00 | -1.12 | 800 | p=0.263  |
|                                      | Male   | 307 | 2.79 | 0.95 |       |     |          |
|                                      | Total  | 802 |      |      |       |     |          |
| Self-Rewarding                       | Female | 465 | 4.11 | 0.84 | 4.47  | 800 | p=0.001* |
|                                      | Male   | 307 | 3.83 | 0.93 |       |     |          |
|                                      | Total  | 802 |      |      |       |     |          |
| Focusing Thoughts on Natural Rewards | Female | 465 | 4.27 | 0.68 | 2.74  | 800 | p=0.006* |
|                                      | Male   | 307 | 4.13 | 0.73 |       |     |          |
|                                      | Total  | 802 |      |      |       |     |          |

According to Table 8, there is a notable difference favoring women in the Self-Leadership Scale in general, Self-Talk, Self-Rewarding and Focusing on Thoughts with Natural Rewards by gender ( $p < 0.05$ ). However, there is not important difference in the other sub-dimensions by gender ( $p > 0.05$ ). The t-Test results for Digital Leadership Scale by school status are indicated in Table 9.

Table 9.

*Digital Leadership Scale t-Test Results According to Teachers' School Status*

| Digital Leadership | School  | n   | $\bar{x}$ | ss   | t     | df  | p        |
|--------------------|---------|-----|-----------|------|-------|-----|----------|
| General            | Public  | 702 | 3.72      | 0.96 | -4.34 | 800 | p=0.001* |
|                    | Private | 100 | 4.16      | 0.80 |       |     |          |
|                    | Total   | 802 |           |      |       |     |          |
| Innovative         | Public  | 702 | 3.72      | 0.95 | -4.53 | 800 | p=0.001* |
|                    | Private | 100 | 4.18      | 0.75 |       |     |          |
|                    | Total   | 802 |           |      |       |     |          |
| Supportive         | Public  | 702 | 3.71      | 1.06 | -3.63 | 800 | p=0.001* |
|                    | Private | 100 | 4.11      | 0.98 |       |     |          |
|                    | Total   | 802 |           |      |       |     |          |

When looking at Table 9, there is a notable difference favoring private schools in the Innovative and Supportive sub-dimensions and Digital Leadership in general by school status ( $p < 0.05$ ). In other words, private school teachers think that school principals have higher levels of digital leadership skills than teachers working in public schools. The t-Test results for the Learning Organization Scale according to school status are shown in Table 10.

Table 10.

*Learning Organization Scale t-Test Results According to Teachers' School Status*

| Learning Organization   | School  | n   | $\bar{x}$ | sd   | t     | df  | p       |
|-------------------------|---------|-----|-----------|------|-------|-----|---------|
| General                 | Public  | 702 | 3.68      | 0.93 | -1.10 | 800 | p=0.270 |
|                         | Private | 100 | 3.78      | 0.84 |       |     |         |
|                         | Total   | 802 |           |      |       |     |         |
| Organizational Learning | Public  | 702 | 3.77      | 0.95 | -0.69 | 800 | p=0.493 |
|                         | Private | 100 | 3.84      | 0.85 |       |     |         |
|                         | Total   | 802 |           |      |       |     |         |
| Innovative Learning     | Public  | 702 | 3.53      | 1.02 | -1.87 | 800 | p=0.061 |
|                         | Private | 100 | 3.73      | 0.89 |       |     |         |
|                         | Total   | 802 |           |      |       |     |         |
| Visionary Learning      | Public  | 702 | 3.67      | 0.98 | -0.86 | 800 | p=0.389 |
|                         | Private | 100 | 3.76      | 0.95 |       |     |         |
|                         | Total   | 802 |           |      |       |     |         |

According to Table 10, the responses given by the participants in the Learning Organization Scale do not differ significantly by the school status ( $p > 0.05$ ). The responses in the sub-dimensions do not differ significantly as well ( $p > 0.05$ ). The t-Test results for the Self-Leadership Scale by school status (public/ private) are shown in Table 11.

Table 11.

*Self-Leadership Scale t-Test Results by Teachers' School Status*

| <b>Self-Leadership</b>   | <b>School</b> | <b>n</b> | <b><math>\bar{x}</math></b>       | <b>sd</b> | <b>t</b> | <b>df</b> | <b>p</b>        |
|--|---------------|----------|-----------------------------------|-----------|----------|-----------|-----------------|
| General  | Public        | 702      | 3.95                              | 0.40      | -2.01    | 800       | <b>p=0.044*</b> |
|  | Private       | 100      | 4.03                              | 0.42      |          |           |                 |
|  | Total         | 802      | <b>Yes significant difference</b> |           |          |           |                 |
| Imagining Successful Performance by Setting Goals for Yourself | Public        | 702      | 4.23                              | 0.54      | -1.48    | 800       | p=0.140         |
|  | Private       | 100      | 4.32                              | 0.55      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Self-Talk  | Public        | 702      | 3.89                              | 0.88      | -1.30    | 800       | p=0.195         |
|  | Private       | 100      | 4.01                              | 0.78      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Evaluating Thoughts and Ideas                                  | Public        | 702      | 4.25                              | 0.53      | -0.87    | 800       | p=0.931         |
|  | Private       | 100      | 4.25                              | 0.57      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Self-Observation   | Public        | 702      | 4.25                              | 0.57      | -1.30    | 800       | p=0.193         |
|  | Private       | 100      | 4.33                              | 0.60      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Setting Reminders  | Public        | 702      | 3.92                              | 0.93      | -2.03    | 800       | <b>p=0.043*</b> |
|  | Private       | 100      | 4.11                              | 0.80      |          |           |                 |
|  | Total         | 802      | <b>Yes significant difference</b> |           |          |           |                 |
| Self-Punishment  | Public        | 702      | 2.75                              | 0.98      | 0.57     | 800       | p=0,570         |
|  | Private       | 100      | 2.69                              | 0.97      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Self-Rewarding   | Public        | 702      | 3.96                              | 0.90      | -3.03    | 800       | <b>p=0.003*</b> |
|  | Private       | 100      | 4.25                              | 0.73      |          |           |                 |
|  | Total         | 802      | <b>Yes significant difference</b> |           |          |           |                 |
| Focusing Thoughts on Natural Rewards                           | Public        | 702      | 4.20                              | 0.70      | -1.64    | 800       | p=0.102         |
|  | Private       | 100      | 4.32                              | 0.75      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |

Table 11 shows that there is a notable difference in favor of teachers in private schools in the Self-Leadership Scale in general in terms of school status, in the sub-dimensions of Setting Reminders and Self Rewarding ( $p < 0.05$ ). In other words, private school teachers think that they are better than public school teachers in terms of self-leadership in general, setting reminders and self-rewarding. The t-Test results for the Digital Leadership Scale according to educational status are shown in Table 12.

Table 12.

*Digital Leadership Scale Results of t-Test by the Educational Status of Teachers*

| <b>Digital Leadership</b> | <b>Status</b> | <b>n</b> | <b><math>\bar{x}</math></b> | <b>ss</b> | <b>t</b> | <b>df</b> | <b>p</b> |
|---------------------------|---------------|----------|-----------------------------|-----------|----------|-----------|----------|
| General                   | Bachelor      | 602      | 3.77                        | 0.95      | -1.36    | 800       | p=0.892  |
|                           | Postgraduate  | 200      | 3.78                        | 0.96      |          |           |          |
|                           | Total         | 802      | No significant difference   |           |          |           |          |
| Innovative                | Bachelor      | 602      | 3.78                        | 0.94      | -1.86    | 800       | p=0.853  |
|                           | Postgraduate  | 200      | 3.79                        | 0.95      |          |           |          |
|                           | Total         | 802      | No significant difference   |           |          |           |          |
| Supportive                | Bachelor      | 602      | 3.76                        | 1.06      | -0.04    | 800       | p=0.972  |
|                           | Postgraduate  | 200      | 3.76                        | 1.07      |          |           |          |
|                           | Total         | 802      | No significant difference   |           |          |           |          |

Looking at Table 12, it is understood that the responses given by the participants in the Digital Leadership Scale do not differ significantly by the educational status ( $p > 0.05$ ). The responses in the sub-dimensions do not differ significantly similarly ( $p > 0.05$ ). The t-Test results for the Learning Organization Scale by educational status are shown in Table 13.

Table 13.

*Learning Organization Scale Results of t-Test by the Educational Status of Teachers*

| <b>Learning Organization</b> | <b>Status</b> | <b>n</b> | <b><math>\bar{x}</math></b> | <b>sd</b> | <b>t</b> | <b>df</b> | <b>p</b> |
|------------------------------|---------------|----------|-----------------------------|-----------|----------|-----------|----------|
| General                      | Bachelor      | 602      | 3.70                        | 0.92      | 0.66     | 800       | p=0.513  |
|                              | Postgraduate  | 200      | 3.65                        | 0.92      |          |           |          |
|                              | Total         | 802      | No significant difference   |           |          |           |          |
| Organizational Learning      | Bachelor      | 602      | 3.80                        | 0.93      | 1.29     | 800       | p=0.199  |
|                              | Postgraduate  | 200      | 3.70                        | 0.95      |          |           |          |
|                              | Total         | 802      | No significant difference   |           |          |           |          |
| Innovative Learning          | Bachelor      | 602      | 3.55                        | 1.00      | -0.43    | 800       | p=0.966  |
|                              | Postgraduate  | 200      | 3.55                        | 1.00      |          |           |          |
|                              | Total         | 802      | No significant difference   |           |          |           |          |
| Visionary Learning           | Bachelor      | 602      | 3.68                        | 0.98      | 0.29     | 800       | p=0.772  |
|                              | Postgraduate  | 200      | 3.66                        | 0.96      |          |           |          |
|                              | Total         | 802      | No significant difference   |           |          |           |          |

According to Table 13, there is not important difference in the Learning Organization Scale based on educational status ( $p>0.05$ ). There is also no important difference its sub-dimensions as well ( $p>0.05$ ). The t-Test results for the Self-Leadership Scale by education status are shown in Table 14.

Table 14.

*Self-Leadership Scale t-Test Results by the Educational Status of Teachers*

| <b>Self-Leadership</b>   | <b>Status</b> | <b>n</b> | <b><math>\bar{x}</math></b>       | <b>sd</b> | <b>t</b> | <b>df</b> | <b>p</b>        |
|--|---------------|----------|-----------------------------------|-----------|----------|-----------|-----------------|
| General  | Bachelor      | 602      | 3.94                              | 0.40      | -2.03    | 800       | <b>p=0.042*</b> |
|  | Postgraduate  | 200      | 4.00                              | 0.43      |          |           |                 |
|  | Total         | 802      | <b>Yes significant difference</b> |           |          |           |                 |
| Imagining Successful Performance by Setting Goals for Yourself | Bachelor      | 602      | 4.24                              | 0.54      | -1.28    | 800       | p=0.199         |
|  | Postgraduate  | 200      | 4.29                              | 0.54      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Self-Talk  | Bachelor      | 602      | 3.90                              | 0.88      | -0.39    | 800       | p=0.695         |
|  | Postgraduate  | 200      | 3.92                              | 0.78      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Evaluating Thoughts and Ideas                                  | Bachelor      | 602      | 4.24                              | 0.53      | -1.00    | 800       | p=0.316         |
|  | Postgraduate  | 200      | 4.28                              | 0.54      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Self-Observation   | Bachelor      | 602      | 4.24                              | 0.58      | -1.74    | 800       | p=0.082         |
|  | Postgraduate  | 200      | 4.32                              | 0.55      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Setting Reminders  | Bachelor      | 602      | 3.94                              | 0.88      | 0.81     | 800       | p=0.936         |
|  | Postgraduate  | 200      | 3.93                              | 1.00      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Self-Punishment  | Bachelor      | 602      | 2.70                              | 0.96      | -2.20    | 800       | <b>p=0.028*</b> |
|  | Postgraduate  | 200      | 2.88                              | 1.04      |          |           |                 |
|  | Total         | 802      | <b>Yes significant difference</b> |           |          |           |                 |
| Self-Rewarding   | Bachelor      | 602      | 3.98                              | 0.88      | -0.99    | 800       | p=0.320         |
|  | Postgraduate  | 200      | 4.05                              | 0.92      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |
| Focusing Thoughts on Natural Rewards                           | Bachelor      | 602      | 4.20                              | 0.70      | -0.47    | 800       | p=0.635         |
|  | Postgraduate  | 200      | 4.23                              | 0.75      |          |           |                 |
|  | Total         | 802      | No significant difference         |           |          |           |                 |

Looking at Table 14, there is a notable difference favoring teachers with postgraduate education in the Self Leadership Scale in general and in the self-punishment by the education level of the teachers ( $p < 0.05$ ). In other words, teachers with postgraduate education think that they are at a better level than teachers with bachelor education in terms of self-leadership in general and in the self-punishment sub-dimension. The ANOVA Test results for the Digital Leadership Scale by school type are shown in Table 15.

Table 15.

*Digital Leadership Scale ANOVA Test Results by Teachers' School Type*

| Digital Leadership | Status         | n   | $\bar{x}$ | sd   | F    | p             |
|--------------------|----------------|-----|-----------|------|------|---------------|
| General            | Anatolian      | 373 | 3.79      | 0.92 | 5.52 | <b>0.001*</b> |
|                    | Science-Social | 162 | 3.98      | 0.86 |      |               |
|                    | Vocational     | 195 | 3.69      | 1.03 |      |               |
|                    | Imam Hatip     | 72  | 3.48      | 0.95 |      |               |
|                    | Total          | 802 | 3.77      | 0.95 |      |               |
| Innovative         | Anatolian      | 373 | 3.78      | 0.91 | 6.48 | <b>0.001*</b> |
|                    | Science-Social | 162 | 4.02      | 0.85 |      |               |
|                    | Vocational     | 195 | 3.69      | 1.01 |      |               |
|                    | Imam Hatip     | 72  | 3.50      | 0.97 |      |               |
|                    | Total          | 802 | 3.78      | 0.94 |      |               |
| Supportive         | Anatolian      | 373 | 3.80      | 1.02 | 3.81 | <b>0.010*</b> |
|                    | Science-Social | 162 | 3.89      | 1.00 |      |               |
|                    | Vocational     | 195 | 3.68      | 1.14 |      |               |
|                    | Imam Hatip     | 72  | 3.43      | 1.07 |      |               |
|                    | Total          | 802 | 3.76      | 1.06 |      |               |

Table 15 shows that Digital Leadership Scale in general, Innovative and Supportive differ significantly depending on the type of school ( $p < 0.05$ ). Since the variances were homogeneously distributed, the Post Hoc LSD test was used to find this difference. Post Hoc LSD Test results for the Digital Leadership Scale by school type are shown in Table 16.

Table 16.

*Digital Leadership Scale Post Hoc LSD Test Results by School Type*

| Digital Leadership | School (I)      | School (J)      | Mean Difference (I-J) | sd   | p             |
|--------------------|-----------------|-----------------|-----------------------|------|---------------|
| General            | Anatolian       | Science- Social | -0.19                 | 0.08 | <b>0.031*</b> |
|                    |                 | Vocational      | 0.10                  | 0.08 | 0.224         |
|                    |                 | Imam Hatip      | 0.30                  | 0.12 | <b>0.011*</b> |
|                    | Science- Social | Anatolian       | 0.19                  | 0.08 | <b>0.031*</b> |
|                    |                 | Vocational      | 0.29                  | 0.10 | <b>0.004*</b> |
|                    |                 | Imam Hatip      | 0.50                  | 0.13 | <b>0.000*</b> |
|                    | Vocational      | Anatolian       | -0.10                 | 0.08 | 0.224         |
|                    |                 | Science- Social | -0.29                 | 0.10 | <b>0.004*</b> |
|                    |                 | Imam Hatip      | 0.20                  | 0.12 | 0.111         |
|                    | Imam Hatip      | Anatolian       | -0.30                 | 0.12 | <b>0.011*</b> |
|                    |                 | Science- Social | -0.50                 | 0.13 | <b>0.000*</b> |
|                    |                 | Vocational      | -0.20                 | 0.12 | 0.111         |
| Innovative         | Anatolian       | Science- Social | -0.24                 | 0.08 | <b>0.005*</b> |
|                    |                 | Vocational      | 0.09                  | 0.08 | 0.273         |
|                    |                 | Imam Hatip      | 0.27                  | 0.11 | <b>0.023*</b> |
|                    | Science- Social | Anatolian       | 0.24                  | 0.08 | <b>0.005*</b> |
|                    |                 | Vocational      | 0.33                  | 0.09 | <b>0.001*</b> |
|                    |                 | Imam Hatip      | 0.52                  | 0.13 | <b>0.000*</b> |
|                    | Vocational      | Anatolian       | -0.09                 | 0.08 | 0.273         |
|                    |                 | Science- Social | -0.33                 | 0.09 | <b>0.001*</b> |
|                    |                 | Imam Hatip      | 0.18                  | 0.12 | 0.155         |

|            |                 |                 |       |      |               |
|------------|-----------------|-----------------|-------|------|---------------|
|            |                 | Anatolian       | -0.27 | 0.11 | <b>0.023*</b> |
|            | Imam Hatip      | Science- Social | -0.52 | 0.13 | <b>0.000*</b> |
|            |                 | Vocational      | -0.18 | 0.12 | 0.155         |
|            |                 | Science- Social | -0.08 | 0.09 | 0.409         |
|            | Anatolian       | Vocational      | 0.12  | 0.09 | 0.186         |
|            |                 | Imam Hatip      | 0.38  | 0.13 | <b>0.005*</b> |
| Supportive |                 | Anatolian       | 0.08  | 0.09 | 0.409         |
|            | Science- Social | Vocational      | 0.20  | 0.11 | 0.067         |
|            |                 | Imam Hatip      | 0.46  | 0.14 | <b>0.002*</b> |
|            |                 | Anatolian       | -0.12 | 0.09 | 0.186         |
|            | Vocational      | Science- Social | -0.20 | 0.11 | 0.067         |
|            |                 | Imam Hatip      | 0.25  | 0.14 | 0.076         |
|            |                 | Anatolian       | -0.38 | 0.13 | <b>0.005*</b> |
|            | Imam Hatip      | Science- Social | -0.46 | 0.14 | <b>0.002*</b> |
|            |                 | Vocational      | -0.25 | 0.14 | 0.076         |

When Table 16 is examined, compared to teachers at Anatolian, Vocational and Imam Hatip High Schools, those at Science-Social Sciences High Schools are better in Innovative and digital leadership in general. Furthermore, teachers at Anatolian High Schools have higher perceptions than those at Imam Hatip High Schools in Innovative and digital leadership in general ( $p < 0.05$ ). Teachers' perceptions in the Science and Social Sciences are higher than those in the Vocationals and the Imam Hatips in the supportive sub-dimension. In addition, the perceptions of teachers in Anatolian High Schools are higher than the level of teachers in the Imam Hatips ( $p < 0.05$ ). The ANOVA Test results for the Learning Organization Scale by school type are shown in Table 17.

Table 17.

*Learning Organization Scale Teachers' ANOVA Results by School Type*

| Learning Organization   | Status         | n   | $\bar{x}$ | sd   | F    | p             |
|-------------------------|----------------|-----|-----------|------|------|---------------|
| General                 | Anatolian      | 373 | 3.74      | 0.88 | 3.95 | <b>0.008*</b> |
|                         | Science-Social | 162 | 3.73      | 0.83 |      |               |
|                         | Vocational     | 195 | 3.69      | 1.02 |      |               |
|                         | Imam Hatip     | 72  | 3.34      | 0.97 |      |               |
|                         | Total          | 802 | 3.69      | 0.92 |      |               |
| Organizational Learning | Anatolian      | 373 | 3.85      | 0.90 | 4.18 | <b>0.006*</b> |
|                         | Science-Social | 162 | 3.75      | 0.84 |      |               |
|                         | Vocational     | 195 | 3.78      | 1.03 |      |               |
|                         | Imam Hatip     | 72  | 3.43      | 0.98 |      |               |
|                         | Total          | 802 | 3.78      | 0.94 |      |               |
| Innovative Learning     | Anatolian      | 373 | 3.57      | 0.96 | 4.66 | <b>0.003*</b> |
|                         | Science-Social | 162 | 3.70      | 0.89 |      |               |
|                         | Vocational     | 195 | 3.53      | 1.13 |      |               |
|                         | Imam Hatip     | 72  | 3.18      | 1.05 |      |               |
|                         | Total          | 802 | 3.55      | 1.00 |      |               |
| Visionary Learning      | Anatolian      | 373 | 3.72      | 0.94 | 3.12 | <b>0.025*</b> |
|                         | Science-Social | 162 | 3.71      | 0.90 |      |               |
|                         | Vocational     | 195 | 3.69      | 1.05 |      |               |
|                         | Imam Hatip     | 72  | 3.34      | 1.03 |      |               |
|                         | Total          | 802 | 3.68      | 0.98 |      |               |

According to Table 17, the responses given by the participants in the Learning Organization Scale in general and in the Organizational Learning, Innovative Learning and Visionary Learning sub-dimensions show significant differences according to the type of school ( $p < 0.05$ ). Since the variances were homogeneously distributed, the Post Hoc LSD test was used to find this difference. Post Hoc Games Howell Test results for the Learning Organization Scale by school type are shown in Table 18.

Table 18.

## Learning Organization Scale Post Hoc Games Howell Test Results by School Type

| Learning Organization   | School (I)      | School (J)      | Mean Difference (I-J) | sd   | p             |
|-------------------------|-----------------|-----------------|-----------------------|------|---------------|
| General                 | Anatolian       | Science- Social | 0.01                  | 0.07 | 0.998         |
|                         |                 | Vocational      | 0.04                  | 0.08 | 0.939         |
|                         |                 | Imam Hatip      | 0.39                  | 0.12 | <b>0.009*</b> |
|                         | Science- Social | Anatolian       | -0.01                 | 0.07 | 0.998         |
|                         |                 | Vocational      | 0.03                  | 0.09 | 0.982         |
|                         |                 | Imam Hatip      | 0.38                  | 0.13 | <b>0.020*</b> |
|                         | Vocational      | Anatolian       | -0.04                 | 0.08 | 0.939         |
|                         |                 | Science- Social | -0.03                 | 0.09 | 0.982         |
|                         |                 | Imam Hatip      | 0.34                  | 0.13 | 0.053         |
|                         | Imam Hatip      | Anatolian       | -0.39                 | 0.12 | <b>0.009*</b> |
|                         |                 | Science- Social | -0.38                 | 0.13 | <b>0.020*</b> |
|                         |                 | Vocational      | -0.34                 | 0.13 | 0,053         |
| Organizational Learning | Anatolian       | Science- Social | 0.10                  | 0.08 | 0.582         |
|                         |                 | Vocational      | 0.07                  | 0.08 | 0.841         |
|                         |                 | Imam Hatip      | 0.42                  | 0.12 | <b>0.006*</b> |
|                         | Science- Social | Anatolian       | -0.10                 | 0.08 | 0.582         |
|                         |                 | Vocational      | -0.03                 | 0.09 | 0.990         |
|                         |                 | Imam Hatip      | 0.31                  | 0.13 | 0.085         |
|                         | Vocational      | Anatolian       | -0.07                 | 0.08 | 0.841         |
|                         |                 | Science- Social | 0.03                  | 0.09 | 0.990         |
|                         |                 | Imam Hatip      | 0.34                  | 0.13 | 0.059         |
|                         | Imam Hatip      | Anatolian       | -0.42                 | 0.12 | <b>0.006*</b> |
|                         |                 | Science- Social | -0.31                 | 0.13 | 0.085         |
|                         |                 | Vocational      | -0.34                 | 0.13 | 0.059         |
| Innovative Learning     | Anatolian       | Science- Social | -0.13                 | 0.08 | 0.409         |
|                         |                 | Vocational      | 0.03                  | 0.09 | 0.976         |
|                         |                 | Imam Hatip      | 0.39                  | 0.13 | <b>0.021*</b> |
|                         | Science- Social | Anatolian       | 0.13                  | 0.08 | 0.409         |
|                         |                 | Vocational      | 0.17                  | 0.10 | 0.374         |
|                         |                 | Imam Hatip      | 0.52                  | 0.14 | <b>0.002*</b> |
|                         | Vocational      | Anatolian       | -0.03                 | 0.09 | 0.976         |
|                         |                 | Science- Social | -0.17                 | 0.10 | 0.374         |
|                         |                 | Imam Hatip      | 0.35                  | 0.14 | 0.086         |
|                         | Imam Hatip      | Anatolian       | -0.39                 | 0.13 | <b>0.021*</b> |
|                         |                 | Science- Social | -0.52                 | 0.14 | <b>0.002*</b> |
|                         |                 | Vocational      | -0.35                 | 0.14 | 0.086         |
| Visionary Learning      | Anatolian       | Science- Social | 0.00                  | 0.08 | 1.000         |
|                         |                 | Vocational      | 0.02                  | 0.08 | 0.992         |
|                         |                 | Imam Hatip      | 0.37                  | 0.13 | <b>0.028*</b> |
|                         | Science- Social | Anatolian       | -0,00                 | 0.08 | 1.000         |
|                         |                 | Vocational      | 0,02                  | 0.10 | 0.997         |
|                         |                 | Imam Hatip      | 0,36                  | 0.14 | <b>0.049*</b> |
|                         | Vocational      | Anatolian       | -0.02                 | 0.08 | 0.992         |
|                         |                 | Science- Social | -0.02                 | 0.10 | 0.997         |
|                         |                 | Imam Hatip      | 0.34                  | 0,14 | 0.078         |
|                         | Imam Hatip      | Anatolian       | -0.37                 | 0.13 | <b>0.028*</b> |
|                         |                 | Science- Social | -0.36                 | 0.14 | <b>0.049*</b> |
|                         |                 | Vocational      | -0.34                 | 0.14 | 0.078         |

Based on the findings of the Post Hoc Games Howell Test, Table 18 shows that teachers at Anatolian and Science-Social High Schools have more positive opinions on learning organization in general than do teachers at the Imam Hatips. Teachers at the Anatolians have more positive opinions on organizational learning dimension than teachers at Imam Hatip High Schools. Teachers at Anatolian and Science-Social Sciences High Schools have more positive opinions than teachers at the Imam Hatips in the dimension of Innovative Learning and Visionary Learning. The ANOVA Test results for the teachers' Self-Leadership Scale by education status are shown in Table 19.

Table 19.

*Self-Leadership Scale ANOVA Results of Teachers by School Type*

| <b>Self-Leadership</b>   | <b>Status</b>  | <b>n</b> | <b><math>\bar{x}</math></b> | <b>sd</b> | <b>F</b> | <b>p</b>      |
|--|----------------|----------|-----------------------------|-----------|----------|---------------|
| General  | Anatolian      | 373      | 3.96                        | 0.41      | 4.35     | <b>0.005*</b> |
|  | Science-Social | 162      | 4.00                        | 0.40      |          |               |
|  | Vocational     | 195      | 3.97                        | 0.41      |          |               |
|  | Imam Hatip     | 72       | 3.79                        | 0.38      |          |               |
|  | Total          | 802      | 3.95                        | 0.41      |          |               |
| Imagining Successful Performance by Setting Goals for Yourself | Anatolian      | 373      | 4.25                        | 0.54      | 4.88     | <b>0.002*</b> |
|  | Science-Social | 162      | 4.34                        | 0.51      |          |               |
|  | Vocational     | 195      | 4.24                        | 0.55      |          |               |
|  | Imam Hatip     | 72       | 4.05                        | 0.49      |          |               |
|  | Total          | 802      | 4.24                        | 0.53      |          |               |
| Self-Talk  | Anatolian      | 373      | 3,92                        | 0.84      | 1.96     | 0.118         |
|  | Science-Social | 162      | 3.97                        | 0.84      |          |               |
|  | Vocational     | 195      | 3.89                        | 0.90      |          |               |
|  | Imam Hatip     | 72       | 3.68                        | 0.95      |          |               |
|  | Total          | 802      | 3.90                        | 0.87      |          |               |
| Evaluating Thoughts and Ideas                                  | Anatolian      | 373      | 4.23                        | 0.53      | 1.38     | 0.240         |
|  | Science-Social | 162      | 4.23                        | 0.55      |          |               |
|  | Vocational     | 195      | 4.30                        | 0.52      |          |               |
|  | Imam Hatip     | 72       | 4.17                        | 0.52      |          |               |
|  | Total          | 802      | 4.24                        | 0.53      |          |               |
| Self-Observation   | Anatolian      | 373      | 4.24                        | 0.55      | 1.83     | 0.140         |
|  | Science-Social | 162      | 4.31                        | 0.56      |          |               |
|  | Vocational     | 195      | 4.28                        | 0.60      |          |               |
|  | Imam Hatip     | 72       | 4.13                        | 0.58      |          |               |
|  | Total          | 802      | 4.26                        | 0.57      |          |               |
| Setting Reminders  | Anatolian      | 373      | 3.91                        | 0.87      | 0.66     | 0.574         |
|  | Science-Social | 162      | 3.95                        | 1.00      |          |               |
|  | Vocational     | 195      | 4.01                        | 0.91      |          |               |
|  | Imam Hatip     | 72       | 3.85                        | 0.90      |          |               |
|  | Total          | 802      | 3.94                        | 0.91      |          |               |
| Self-Punishment  | Anatolian      | 373      | 2.78                        | 0.97      | 0.79     | 0.495         |
|  | Science-Social | 162      | 2.71                        | 0.93      |          |               |
|  | Vocational     | 195      | 2.72                        | 1.03      |          |               |
|  | Imam Hatip     | 72       | 2.60                        | 0.95      |          |               |
|  | Total          | 802      | 2.74                        | 0.98      |          |               |
| Self-Rewarding   | Anatolian      | 373      | 3.99                        | 0.88      | 2.36     | 0.069         |
|  | Science-Social | 162      | 4.09                        | 0.88      |          |               |
|  | Vocational     | 195      | 3.99                        | 0.82      |          |               |
|  | Imam Hatip     | 72       | 3.76                        | 1.02      |          |               |
|  | Total          | 802      | 3.99                        | 0.88      |          |               |

|                                      |                |     |      |      |      |       |
|--------------------------------------|----------------|-----|------|------|------|-------|
| Focusing Thoughts on Natural Rewards | Anatolian      | 373 | 4.20 | 0.71 | 1.73 | 0.159 |
|                                      | Science-Social | 162 | 4.22 | 0.77 |      |       |
|                                      | Vocational     | 195 | 4.26 | 0.66 |      |       |
|                                      | Imam Hatip     | 72  | 4.04 | 0.60 |      |       |
|                                      | Total          | 802 | 4.21 | 0.70 |      |       |

Table 19 shows that the teachers' school type significantly affects both the Self-Leadership Scale in general and Imagining Successful Performance by Setting Goals for Yourself dimension ( $p < 0.05$ ). Since the variances were homogeneously distributed, the Post Hoc LSD test was applied to ascertain this difference. The LSD Test results for the Self-Leadership Scale in general and the Imagining Successful Performance by Setting Goals for Yourself sub-dimension according to school type are shown in Table 20.

Table 20.

*Post Hoc LSD Results of Self-Leadership Scale According to School Type of Teachers*

| Self-Leadership  | School (I)      | School (J)      | Mean Difference (I-J) | sd   | p             |
|--|-----------------|-----------------|-----------------------|------|---------------|
| General  | Anatolian       | Science- Social | -0.04                 | 0.03 | 0.294         |
|  |                 | Vocational      | -0.01                 | 0.03 | 0.707         |
|  |                 | Imam Hatip      | 0.16                  | 0.05 | <b>0.002*</b> |
|  | Science- Social | Anatolian       | 0.04                  | 0.03 | 0.294         |
|  |                 | Vocational      | 0.02                  | 0.04 | 0.537         |
|  |                 | Imam Hatip      | 0.20                  | 0.05 | <b>0.001*</b> |
|  | Vocational      | Anatolian       | 0.01                  | 0.03 | 0.707         |
|  |                 | Science- Social | -0.02                 | 0.04 | 0.537         |
|  |                 | Imam Hatip      | 0.17                  | 0.05 | <b>0.002*</b> |
|  | Imam Hatip      | Anatolian       | -0.16                 | 0.05 | <b>0.002*</b> |
|  |                 | Science- Social | -0.20                 | 0,05 | <b>0.001*</b> |
|  |                 | Vocational      | -0.17                 | 0.05 | <b>0.002*</b> |
| Imagining Successful Performance by Setting Goals for Yourself | Anatolian       | Science- Social | -0.09                 | 0.05 | 0.074         |
|  |                 | Vocational      | 0.00                  | 0.04 | 0.878         |
|  |                 | Imam Hatip      | 0.19                  | 0.06 | <b>0.004</b>  |
|  | Science- Social | Anatolian       | 0.09                  | 0.05 | 0.074         |
|  |                 | Vocational      | 0.09                  | 0.05 | 0.088         |
|  |                 | Imam Hatip      | 0.28                  | 0.07 | <b>0.000*</b> |
|  | Vocational      | Anatolian       | -0.00                 | 0.04 | 0.878         |
|  |                 | Science- Social | -0.09                 | 0.05 | 0.088         |
|  |                 | Imam Hatip      | 0.19                  | 0.07 | <b>0.009*</b> |
|  | Imam Hatip      | Anatolian       | -0.19                 | 0.06 | <b>0.004*</b> |
|  |                 | Science- Social | -0.28                 | 0.07 | <b>0.000*</b> |
|  |                 | Vocational      | -0.19                 | 0.07 | <b>0.009*</b> |

According to Table 20, the perceptions of teachers in the Anatolian, Science-Social and Vocational are higher than those of teachers in the Imam Hatips in terms of the Self-Leadership Scale in general and Imagining Successful Performance by Setting Goals for Yourself according to school type ( $p < 0.05$ ). The ANOVA Test results for the Digital Leadership Scale by the seniority of the teachers are shown in Table 21.

Table 21.  
*Digital Leadership Scale ANOVA Results by Teachers' Seniority*

| Digital Leadership | Status   | n   | $\bar{x}$ | sd   | F    | p             |
|--------------------|----------|-----|-----------|------|------|---------------|
| General            | 1-5      | 60  | 3.95      | 0.73 | 1.76 | 0.118         |
|                    | 6-10     | 145 | 3.89      | 0.92 |      |               |
|                    | 11-15    | 131 | 3.85      | 0.90 |      |               |
|                    | 16-20    | 107 | 3.70      | 0.99 |      |               |
|                    | 21-25    | 180 | 3.71      | 1.01 |      |               |
|                    | 26- over | 179 | 3.67      | 0.98 |      |               |
|                    | Total    | 802 | 3.77      | 0.95 |      |               |
| Innovative         | 1-5      | 60  | 3.93      | 0.74 | 1.19 | 0.312         |
|                    | 6-10     | 145 | 3.87      | 0.92 |      |               |
|                    | 11-15    | 131 | 3.85      | 0.88 |      |               |
|                    | 16-20    | 107 | 3.70      | 0.97 |      |               |
|                    | 21-25    | 180 | 3.75      | 1.00 |      |               |
|                    | 26- over | 179 | 3.69      | 0.97 |      |               |
|                    | Total    | 802 | 3.78      | 0.94 |      |               |
| Supportive         | 1-5      | 60  | 3.99      | 0.82 | 2.83 | <b>0.015*</b> |
|                    | 6-10     | 145 | 3.94      | 1.02 |      |               |
|                    | 11-15    | 131 | 3.85      | 1.02 |      |               |
|                    | 16-20    | 107 | 3.70      | 1.11 |      |               |
|                    | 21-25    | 180 | 3.64      | 1.10 |      |               |
|                    | 26- over | 179 | 3.61      | 1.09 |      |               |
|                    | Total    | 802 | 3.76      | 1.06 |      |               |

Looking at Table 21, there is a notable difference in the Supportive dimension by the seniority of the teachers ( $p < 0.05$ ). The LSD test was applied to determine this difference since the variances were distributed homogeneously. Digital Leadership Scale supportive dimension Post Hoc LSD results according to teachers' seniority are shown in Table 22.

Table 22.  
*Digital Leadership Scale Supportive Dimension Post Hoc LSD Results According to Teachers' Seniority*

| Digital Leadership | Seniority/<br>Years (I) | Seniority/<br>Years (J) | Mean Difference<br>(I-J) | sd   | p             |
|--------------------|-------------------------|-------------------------|--------------------------|------|---------------|
| Supportive         | 1-5                     | 6-10                    | 0.05                     | 0.16 | 0.737         |
|                    |                         | 11-15                   | 0.14                     | 0.16 | 0.387         |
|                    |                         | 16-20                   | 0.28                     | 0.16 | 0.091         |
|                    |                         | 21-25                   | 0.35                     | 0.15 | <b>0.025*</b> |
|                    |                         | 26- over                | 0.37                     | 0.15 | <b>0.016*</b> |
|                    | 6-10                    | 1-5                     | -0.05                    | 0.16 | 0.737         |
|                    |                         | 11-15                   | 0.08                     | 0.12 | 0.489         |
|                    |                         | 16-20                   | 0.23                     | 0.13 | 0.083         |
|                    |                         | 21-25                   | 0.29                     | 0.11 | <b>0.012*</b> |
|                    |                         | 26- over                | 0.32                     | 0.11 | <b>0.006*</b> |
|                    | 11-15                   | 1-5                     | -0.14                    | 0.16 | 0.387         |
|                    |                         | 6-10                    | -0.08                    | 0.12 | 0.489         |
|                    |                         | 16-20                   | 0.14                     | 0.13 | 0.290         |
|                    |                         | 21-25                   | 0.20                     | 0.12 | 0.083         |
|                    |                         | 26- over                | 0.23                     | 0.12 | 0.050         |
|                    | 16-20                   | 1-5                     | -0.28                    | 0.16 | 0.091         |
|                    |                         | 6-10                    | -0.23                    | 0.13 | 0.083         |
|                    |                         | 11-15                   | -0.14                    | 0.13 | 0.290         |
|                    |                         | 21-25                   | 0.06                     | 0.12 | 0.616         |
|                    |                         | 26- over                | 0.09                     | 0.12 | 0.472         |

|          |          |       |      |               |
|----------|----------|-------|------|---------------|
|          | 1-5      | -0.35 | 0.15 | <b>0.025*</b> |
|          | 6-10     | -0.29 | 0.11 | <b>0.012*</b> |
| 21-25    | 11-15    | -0.20 | 0.12 | 0.083         |
|          | 16-20    | -0.06 | 0.12 | 0.616         |
|          | 26- over | 0.02  | 0.11 | 0.801         |
|          | 1-5      | -0.37 | 0.15 | <b>0.016*</b> |
|          | 6-10     | -0.32 | 0.11 | <b>0.006*</b> |
| 26- over | 11-15    | -0.23 | 0.12 | 0.050         |
|          | 16-20    | -0.09 | 0.12 | 0.472         |
|          | 21-25    | -0.02 | 0.11 | 0.801         |

Table 22 shows that teachers with 1–5 and 6–10 years of seniority have higher perceptions of the Supportive dimension than do teachers with 21–25 years and 26+ years of seniority. It can be said that the teachers with young age are better in the Supportive dimension. The ANOVA Test results for the Learning Organization Scale by the seniority of the teachers are shown in Table 23.

Table 23.

*Learning Organization Scale ANOVA Results by Seniority of Teachers*

| Learning Organization   | Status   | n   | $\bar{x}$ | sd   | F    | p     |
|-------------------------|----------|-----|-----------|------|------|-------|
| General                 | 1-5      | 60  | 3.74      | 0.77 | 1.37 | 0.234 |
|                         | 6-10     | 145 | 3.84      | 0.85 |      |       |
|                         | 11-15    | 131 | 3.69      | 0.91 |      |       |
|                         | 16-20    | 107 | 3.61      | 0.94 |      |       |
|                         | 21-25    | 180 | 3.67      | 0.95 |      |       |
|                         | 26- over | 179 | 3.59      | 0.96 |      |       |
|                         | Total    | 802 | 3.68      | 0.92 |      |       |
| Organizational Learning | 1-5      | 60  | 3.85      | 0.71 | 1.78 | 0.114 |
|                         | 6-10     | 145 | 3.95      | 0.87 |      |       |
|                         | 11-15    | 131 | 3.79      | 0.94 |      |       |
|                         | 16-20    | 107 | 3.72      | 0.96 |      |       |
|                         | 21-25    | 180 | 3.74      | 0.97 |      |       |
|                         | 26- over | 179 | 3.65      | 0.97 |      |       |
|                         | Total    | 802 | 3.77      | 0.93 |      |       |
| Innovative Learning     | 1-5      | 60  | 3.57      | 0.88 | 0.84 | 0.523 |
|                         | 6-10     | 145 | 3.66      | 0.97 |      |       |
|                         | 11-15    | 131 | 3.58      | 0.97 |      |       |
|                         | 16-20    | 107 | 3.46      | 1.09 |      |       |
|                         | 21-25    | 180 | 3.56      | 1.00 |      |       |
|                         | 26- over | 179 | 3.46      | 1.03 |      |       |
|                         | Total    | 802 | 3.55      | 1.00 |      |       |
| Visionary Learning      | 1-5      | 60  | 3.71      | 0.89 | 1.15 | 0.334 |
|                         | 6-10     | 145 | 3.84      | 0.93 |      |       |
|                         | 11-15    | 131 | 3.65      | 0.96 |      |       |
|                         | 16-20    | 107 | 3.58      | 0.95 |      |       |
|                         | 21-25    | 180 | 3.65      | 1.01 |      |       |
|                         | 26- over | 179 | 3.62      | 1.01 |      |       |
|                         | Total    | 802 | 3.67      | 0.97 |      |       |

When looking at Table 23, there is not a notable difference in the responses provided by participants in the Learning Organization Scale and in the sub-dimensions by seniority of the teachers ( $p > 0.05$ ). The ANOVA Test results of Self-Leadership Scale by the seniority of the teachers are shown in Table 24.

Table 24.

*Self-Leadership Scale ANOVA Results by Teachers' Seniority*

| <b>Self-Leadership</b>   | <b>Status</b> | <b>n</b> | <b><math>\bar{x}</math></b> | <b>sd</b> | <b>F</b> | <b>p</b> |
|--|---------------|----------|-----------------------------|-----------|----------|----------|
| General  | 1-5           | 60       | 3.94                        | 0.37      | 0.20     | 0.959    |
|  | 6-10          | 145      | 3.98                        | 0.40      |          |          |
|  | 11-15         | 131      | 3.95                        | 0.45      |          |          |
|  | 16-20         | 107      | 3.94                        | 0.41      |          |          |
|  | 21-25         | 180      | 3.95                        | 0.38      |          |          |
|  | 26- over      | 179      | 3.94                        | 0.42      |          |          |
|  | Total         | 802      | 3.95                        | 0.41      |          |          |
| Imagining Successful<br>Performance by Setting<br>Goals for Yourself | 1-5           | 60       | 4.25                        | 0.50      | 0.84     | 0.522    |
|  | 6-10          | 145      | 4.30                        | 0.51      |          |          |
|  | 11-15         | 131      | 4.27                        | 0.54      |          |          |
|  | 16-20         | 107      | 4.17                        | 0.59      |          |          |
|  | 21-25         | 180      | 4.22                        | 0.49      |          |          |
|  | 26- over      | 179      | 4.25                        | 0.57      |          |          |
|  | Total         | 802      | 4.24                        | 0.53      |          |          |
| Self-Talk  | 1-5           | 60       | 3.91                        | 0.78      | 1.23     | 0.291    |
|  | 6-10          | 145      | 3.96                        | 0.87      |          |          |
|  | 11-15         | 131      | 3.97                        | 0.83      |          |          |
|  | 16-20         | 107      | 3.90                        | 0.87      |          |          |
|  | 21-25         | 180      | 3.94                        | 0.81      |          |          |
|  | 26- over      | 179      | 3.76                        | 0.97      |          |          |
|  | Total         | 802      | 3.90                        | 0.87      |          |          |
| Evaluating Thoughts and<br>Ideas                                     | 1-5           | 60       | 4.20                        | 0.57      | 0.34     | 0.883    |
|  | 6-10          | 145      | 4.24                        | 0.53      |          |          |
|  | 11-15         | 131      | 4.20                        | 0.56      |          |          |
|  | 16-20         | 107      | 4.26                        | 0.52      |          |          |
|  | 21-25         | 180      | 4.26                        | 0.50      |          |          |
|  | 26- over      | 179      | 4.26                        | 0.55      |          |          |
|  | Total         | 802      | 4.24                        | 0.53      |          |          |
| Self-Observation   | 1-5           | 60       | 4.09                        | 0.63      | 1.78     | 0.113    |
|  | 6-10          | 145      | 4.27                        | 0.58      |          |          |
|  | 11-15         | 131      | 4.21                        | 0.58      |          |          |
|  | 16-20         | 107      | 4.34                        | 0.54      |          |          |
|  | 21-25         | 180      | 4.25                        | 0.51      |          |          |
|  | 26- over      | 179      | 4.29                        | 0.59      |          |          |
|  | Total         | 802      | 4.26                        | 0.57      |          |          |
| Setting Reminders  | 1-5           | 60       | 3.96                        | 0.87      | 1.61     | 0.154    |
|  | 6-10          | 145      | 3.91                        | 0.90      |          |          |
|  | 11-15         | 131      | 3.82                        | 0.97      |          |          |
|  | 16-20         | 107      | 3.87                        | 1.03      |          |          |
|  | 21-25         | 180      | 3.93                        | 0.90      |          |          |
|  | 26- over      | 179      | 4.09                        | 0.79      |          |          |
|  | Total         | 802      | 3.94                        | 0.91      |          |          |

|                                      |          |     |      |      |      |               |
|--------------------------------------|----------|-----|------|------|------|---------------|
| Self-Punishment                      | 1-5      | 60  | 2.60 | 0.83 | 0.97 | 0.431         |
|                                      | 6-10     | 145 | 2.62 | 1.05 |      |               |
|                                      | 11-15    | 131 | 2.82 | 0.92 |      |               |
|                                      | 16-20    | 107 | 2.82 | 1.04 |      |               |
|                                      | 21-25    | 180 | 2.75 | 1.04 |      |               |
|                                      | 26- over | 179 | 2.75 | 0.89 |      |               |
|                                      | Total    | 802 | 2.74 | 0.98 |      |               |
| Self-Rewarding                       | 1-5      | 60  | 4.26 | 0.78 | 4.41 | <b>0.001*</b> |
|                                      | 6-10     | 145 | 4.22 | 0.75 |      |               |
|                                      | 11-15    | 131 | 3.91 | 0.97 |      |               |
|                                      | 16-20    | 107 | 3.87 | 0.96 |      |               |
|                                      | 21-25    | 180 | 3.96 | 0.85 |      |               |
|                                      | 26- over | 179 | 3.88 | 0.90 |      |               |
|                                      | Total    | 802 | 3.99 | 0.88 |      |               |
| Focusing Thoughts on Natural Rewards | 1-5      | 60  | 4.25 | 0.64 | 0.37 | 0.868         |
|                                      | 6-10     | 145 | 4.26 | 0.72 |      |               |
|                                      | 11-15    | 131 | 4.17 | 0.74 |      |               |
|                                      | 16-20    | 107 | 4.19 | 0.72 |      |               |
|                                      | 21-25    | 180 | 4.21 | 0.65 |      |               |
|                                      | 26- over | 179 | 4.18 | 0.71 |      |               |
|                                      | Total    | 802 | 4.21 | 0.70 |      |               |

Table 24 shows a significant difference in the Self Rewarding based on the teachers' seniority ( $p < 0.05$ ). To ascertain this difference, the Post Hoc LSD test was utilized. Self-Leadership Scale self-reward dimension Post Hoc LSD results according to teachers' seniority are presented in Table 25.

Table 25.

*Self-Leadership Scale Self Reward Dimension Post Hoc LSD Results According to Teachers' Seniority*

| Self-Leadership | Seniority/<br>Years (I) | Seniority/<br>Years (J) | Mean Difference<br>(I-J) | sd            | p             |
|-----------------|-------------------------|-------------------------|--------------------------|---------------|---------------|
| Self-Rewarding  | 1-5                     | 6-10                    | 0.03                     | 0.13          | 0.772         |
|                 |                         | 11-15                   | 0.35                     | 0.13          | <b>0.011*</b> |
|                 |                         | 16-20                   | 0.39                     | 0.14          | <b>0.006*</b> |
|                 |                         | 21-25                   | 0.30                     | 0.13          | <b>0.020*</b> |
|                 |                         | 26- over                | 0.38                     | 0.13          | <b>0.004*</b> |
|                 | 6-10                    | 1-5                     | -0.03                    | 0.13          | 0.772         |
|                 |                         | 11-15                   | 0.31                     | 0.10          | <b>0.003*</b> |
|                 |                         | 16-20                   | 0.35                     | 0.11          | <b>0.002*</b> |
|                 |                         | 21-25                   | 0.26                     | 0.09          | <b>0.007*</b> |
|                 |                         | 26- over                | 0.34                     | 0.09          | <b>0,001*</b> |
|                 | 11-15                   | 1-5                     | -0.35                    | 0.13          | <b>0.011*</b> |
|                 |                         | 6-10                    | -0.31                    | 0.10          | <b>0.003*</b> |
|                 |                         | 16-20                   | 0.04                     | 0.11          | 0.703         |
|                 |                         | 21-25                   | -0.04                    | 0.10          | 0.656         |
|                 |                         | 26- over                | 0.03                     | 0.10          | 0.756         |
|                 | 16-20                   | 1-5                     | -0.39                    | 0.14          | <b>0.006*</b> |
|                 |                         | 6-10                    | -0.35                    | 0.11          | <b>0.002*</b> |
|                 |                         | 11-15                   | -0.04                    | 0.11          | 0.703         |
|                 |                         | 21-25                   | -0.08                    | 0.10          | 0.408         |
|                 |                         | 26- over                | -0.01                    | 0.10          | 0.909         |
| 21-25           | 1-5                     | -0.30                   | 0.13                     | <b>0.020*</b> |               |
|                 | 6-10                    | -0.26                   | 0.09                     | <b>0.007*</b> |               |
|                 | 11-15                   | 0.04                    | 0.10                     | 0.656         |               |

|          |          |       |      |               |
|----------|----------|-------|------|---------------|
|          | 16-20    | 0.08  | 0.10 | 0.408         |
|          | 26- over | 0.07  | 0.09 | 0.410         |
|          | 1-5      | -0.38 | 0.13 | <b>0.004*</b> |
|          | 6-10     | -0.34 | 0.09 | <b>0.001*</b> |
| 26- over | 11-15    | -0.03 | 0.10 | 0.756         |
|          | 16-20    | 0.01  | 0.10 | 0,909         |
|          | 21-25    | -0.07 | 0.09 | 0.410         |

According to Table 25, the perceptions of teachers with 1-5 and 6-10 years of seniority in the Self-Rewarding sub-dimension are higher than those of teachers with 11-15, 16-20, 21-25 and 26- over years seniority ( $p < 0.05$ ). It can be said that the teachers with early ages are better in the Self-Rewarding dimension.

### 3.3. Findings on the Third Sub-Problem

The analysis if the digital leadership is a significant predictor of schools becoming learning organization was examined. The relationship between digital leadership and the learning organization of schools was tested. The results are shown in Table 26.

Table 26.

*Results of the Relationship between Digital Leadership and Learning Organization*

| Dependent Variable: Learning Organization |             |      |       |               |      |
|---|-------------|------|-------|---------------|------|
| Variables                                 | Coefficient | sd   | t     | p             | VIF  |
| Stable                                    | 0.79        | 0.08 | 9.73  | <b>0.001*</b> |      |
| Digital Leadership                        | 0.77        | 0.02 | 37.00 | <b>0.001*</b> | 1.00 |
| F   | 1369.33     |      |       | <b>0.001*</b> |      |
| R <sup>2</sup>                            | 0.63        |      |       |               |      |

Table 26 shows the regression analysis findings regarding the effect of teachers' perceptions of school principals' digital leadership level on teachers' perceptions of their schools' learning organization level. When the F test result is examined, it can be said that the established model is valid since the coefficient is 1369.33 and the significance value is 0.001. In addition, the R<sup>2</sup> value of the model is 0.63, which means that 63% of the change in the learning organization variable is due to the digital leadership variable. In other words, the digital leadership variable predicted the learning organization variable at a level of 63%. The presence of a multiple linear connection problem in the model was checked with VIF. Since the VIF value was below 10, there was no problem in the model. The coefficient of the digital leadership variable was found to be 0.77 and the significance value was found to be 0.001. Accordingly, it was concluded that the digital leadership variable affected the learning organization variable statistically significantly and positively.

### 3.4. Findings on the Fourth Sub-Problem

The analysis if digital leadership is a significant predictor of teachers' self-leadership was examined. The relationship between digital leadership and teachers' self-leadership was tested. The results are shown in Table 27.

Table 27.

*The Results of Relationship between Digital Leadership and Self-Leadership*

| Dependent Variable: Self-Leadership |             |      |       |               |      |
|-------------------------------------|-------------|------|-------|---------------|------|
| Variables                           | Coefficient | sd   | t     | p             | VIF  |
| Stable                              | 3.57        | 0.06 | 61.68 | <b>0.001*</b> |      |
| Digital Leadership                  | 0.10        | 0.02 | 6.98  | <b>0.001*</b> | 1.00 |
| F                                   | 48.68       |      |       | <b>0.001*</b> |      |
| R <sup>2</sup>                      | 0.06        |      |       |               |      |

Table 27 shows the regression analysis findings regarding the effect of teachers' perceptions of school principals' digital leadership level on teachers' perceptions of self-leadership level. When the F test result is examined, it can be said that the established model is valid since the coefficient is 48.68 and the significance value is 0.001. In addition, the R<sup>2</sup> value of the model is 0.06, which means that 6% of the change in the self-leadership variable is due to the digital leadership variable. In other words, the digital leadership variable predicted the self-leadership variable at a level of 6%. The presence of a multiple linear connection problem in the model was checked with VIF. Since the VIF value was below 10, there was no problem in the model. The coefficient of the digital leadership variable was found to be 0.10 and the significance value was found to be 0.001. Accordingly, the digital leadership variable affected the self-leadership variable statistically significantly and positively.

#### 4. RESULTS AND DISCUSSION

This study indicates a significant positive relationship the digital leadership of school principals and learning organizations and the teachers' self-leadership. In a study conducted by Aydın (2022), a relationship was found between digital leadership and organizational wisdom. The digital leadership behaviors increased the level of organizational wisdom. Artüz (2020) determined a statistically significant correlation the impact of digital leadership the learning organization on individual performance. Büyükebeşe & Doğan (2022) determined that digital leadership had a favorable impact on employees' innovative work behavior and job performance in their study in health organizations.

According to this study results, teachers perceive their school principals' digital leadership levels at a good level. In a study conducted with 265 teachers in Izmir city, teachers stated that their digital leadership perceptions about themselves were at a very high level (Vural et al., 2023: 1596). In a study conducted with 605 school principals across Turkey, it was determined that school principals' digital leadership behaviors were at a high level (Aydın, 2022: 113). A study conducted in Malaysia found that teachers and school principals have a high level of digital leadership (Hamzah et al., 2021: 216). Based on the average responses to the Learning Organization Scale, teachers' perceptions of their schools as learning organizations were found to be at a good level. Similarly, Şahin (2023) found that teachers' perception of their schools as learning organizations was high. Baydar (2022) found that educational organizations were at a "moderate" level of learning organization, based on the perceptions of school administrators and teachers. Considering the average responses to the Self-Leadership Scale, teachers' perceptions of their self-leadership levels were found to be at a good level. Like this study, Fidan (2019); Göksoy et al. (2014); and Erkoyuncu (2023) found teachers' self-leadership levels to be high in their studies.

By the gender of the teachers, female teachers perceive higher in Self-Leadership Scale in general and Self-Talk, Self-Reward, Focusing on Thought with Natural Rewards sub-dimensions than male teachers. By the teachers' school status, private school teachers perceive higher than public school teachers on the Digital Leadership Scale in general, on the Innovative and Supportive sub-dimensions. By the education status of the teachers; teachers with postgraduate education think that they are at a better level than teachers with bachelor education in the Self-Leadership Scale in general and in the self-punishment sub-dimension.

By the type of school; Science and Social Sciences high school teachers perceive themselves higher on the Digital Leadership Scale in general and Innovation sub-dimensions than Anatolian, Vocational, and Imam Hatip high school teachers. In addition, Anatolian High Schools teachers perceive higher than the teachers in Imam Hatip High Schools. In the Supportive sub-dimension Science and Social Sciences high school teachers perceive higher than the teachers at Vocational and Imam Hatip High Schools. In addition, Anatolian high school teachers perceive higher than those of teachers in Imam Hatip High Schools. By the type of school; Anatolian and Science-Social High School teachers perceive higher than the teachers in Imam Hatip High Schools in Learning Organization. Anatolian High Schools perceive higher than the teachers in Imam Hatip High Schools in the Organizational Learning dimension. Anatolian and Science-Social Sciences High School teachers perceive higher than the teachers in Imam Hatip High Schools in the Innovative Learning and Visionary Learning sub-dimensions. Anatolian, Science-Social and Vocational High Schools perceive higher level than the teachers in Imam Hatip High Schools. By the seniority of teachers; in the Supportive sub-dimension teachers with 1-5 and 6-10 years of seniority perceive higher than those of teachers with 21-25 years and 26 years and above. In the Self Rewarding sub- dimension, teachers with 1-5 and 6-10 years of seniority perceive higher than those of teachers with 11-15, 16-20, 21-25 and 26- over years seniority.

As a result, digital leadership is a significant predictor of schools becoming learning organizations. In other words, digital leadership affects the learning organization statistically significantly and positively. In addition, digital leadership is a significant predictor of teachers' self-leadership. In other words, digital leadership affects self-leadership statistically significantly and positively.

#### 5. RECOMMENDATIONS

-This study revealed that the digital leadership level of school principals positively contributes to the level of schools becoming learning organizations and the level of teachers' self-leadership skills. In the study, teachers' digital leadership perception levels about school principals were found to be high. However, school principals can still receive the necessary in-service training and renew themselves to improve their digital leadership levels.

- The digital leadership skills of school principals can be taken into consideration as a criterion during the school principal assignment phase. School principals with high digital leadership levels can be preferred.

- It may be beneficial to allocate a budget to schools during the digitalization process in education.

- School principals should positively motivate teachers, students and parents for digital transformation in education.

- School principals can make a significant contribution to the transformation of schools into learning organizations and the development of teachers' self-leadership skills by further increasing their digital leadership levels. It is thought that these developments will affect students' academic success positively.

## Research and Publication Ethics Statement

This study was conducted in accordance with research and publication ethics. Ethics committee permission was from Çanakkale Onsekiz Mart University Ethics Committee (Date 16.02.2023, no 02/44).

## Contribution Rates of Authors to the Article

Both authors contributed equally to the study.

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## Statement of Interest

The authors declare that there are no financial or personal competing interests.

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