# SCHOOL ADMINISTRATORS' 21ST CENTURY. EXAMINING THEIR ATTITUDES TOWARDS THEIR SKILLS

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**ABSTRACT**

This study was conducted to understand and evaluate the attitudes of school administrators in TRNC towards 21st century skills. In the study, quantitative research method was adopted by using relational survey model and administrators working in schools in TRNC were determined as the population. The sample was selected by simple random sampling method and included 105 administrators. The data were collected using a personal information form and the "21st century skills scale for educational administrators". According to the results of the study, school administrators generally exhibit a high attitude towards 21st century skills. Especially in critical areas such as critical thinking, problem solving, communication, collaboration, learning and innovation skills, high scores were obtained. However, it was determined that the level of awareness should be increased in areas such as information literacy, media literacy and technology literacy. In the gender analysis, it was found that female administrators' attitudes towards life and professional skills were generally more positive. However, no significant difference was found between genders in other skill categories, indicating that school administrators' attitudes towards 21st century skills are similar in terms of gender. Although there was no significant difference between age groups in general, it was observed that younger managers scored higher in the categories of learning and innovation skills and self-management and initiative taking. This may suggest that young administrators have a positive attitude towards creativity, innovation, and learning. These findings provide important information that can be used as a tool to assess school administrators' attitudes towards 21st century skills.

**Keywords:** School administrator, 21st century skills, educational leadership, Technology leadership.

## 1. INTRODUCTION

### 1.1. Problem Status

The 21st century is an era in which we experience a rapidly changing and evolving world. Technological advances, intercultural interaction, and constant change in economic dynamics prepare individuals for much more than just knowledge. This period has not only transcended traditional learning models, but also brought about a focus on skills that can adapt to the needs of a new knowledge economy and global context (Arıcan and Mutlu, 2023).

At the center of this evolution, individuals need a variety of skills and must constantly develop these skills. Instant access to information, the ability to handle complex problems, effective communication, and the ability to quickly adapt to change are no longer just a luxury but are also vital for personal and professional success (Yazıcı, 2023). In this context, the education system, and especially school administrators, have an important role in equipping individuals with these 21st century skills. School administrators are responsible for directing educational institutions, ensuring that students achieve these important skills and equipping them to navigate effectively in this changing world (Çalışır, Arslan & Özaslan, 2023).

School administrators have a wide range of responsibilities as leaders of educational institutions. These leaders strive to manage and improve their schools effectively. Primarily, they focus on improving student achievement by setting educational standards. They evaluate and update educational programs, monitor student performance, and intervene when necessary. School administrators play the role of guiding, supporting and motivating teachers and other school personnel. They encourage cooperation and communication by creating a good school culture (Özkaya and Kazak, 2023). It supports the professional development of the teaching team and enables teachers to share best practices. They also take an active role in managing student behavior, producing solutions to disciplinary issues, and providing a safe learning environment. School administrators also perform administrative duties such as budget management, effective use of resources, and maintenance of school facilities. They monitor the school's finances, manage resources for development projects, and organize the school's overall operations. They also focus on outward-facing tasks, such as interacting with parents, strengthening relationships with the community, and

ensuring the school's integration with the outside world. They strengthen the school's place in society and create a positive relationship network among various stakeholders (Bayraktar, 2023).

The role of school administrators is a cornerstone of keeping up with the changes brought by the 21st century, improving the quality of education and supporting student success. These leaders play a key role in shaping educational programs, guiding teachers, and providing students with an effective learning environment. At the same time, they can increase teacher motivation, encourage collaboration, and create a positive school culture with their skills in managing staff within the school. They make strategic plans to increase student success and improve the overall performance of the school. In this context, the effective leadership of school administrators plays a critical role in the successful management of educational institutions and preparation for the future (Tutal, 2023).

### 1.2. Purpose and Importance of the Research

This study aims to understand and evaluate school administrators' attitudes towards 21st century skills. School administrators' attitudes towards these skills can affect the extent to which students can access and develop these skills. In addition, understanding how school administrators' attitudes towards these skills are shaped in the process of educational institutions adopting 21st century skills can be an important source of information in the development of educational policies and strategies.

The focus of the study is to understand the attitudes of school administrators in sub-dimensions such as learning and innovation skills, information, media and technology skills, life and professional skills, and to evaluate the effects of these attitudes on educational processes. In this context, the study aims to contribute to creating more effective education strategies by determining the current situation and potential development areas in the adoption of 21st century skills by educational institutions.

### 1.3. hypotheses

The hypotheses of this research are as follows:

H1 : School administrators' attitudes towards 21st century skills differ depending on their gender.

H0 : School administrators ' attitudes towards 21st century skills do not differ according to their gender.

H2 : School administrators ' attitudes towards 21st century skills differ according to age.

H0 : School administrators ' attitudes towards 21st century skills do not differ according to age.

### 1.4. Assumptions

Research participants gave their answers to the scale questions sincerely.

### 1.5. Limitations

Research:
- With research participants,
- With the scale questions used in the research,
- School administrators working in schools in TRNC are limited.

### 1.6. Definitions

**21st Century Skills:** It covers the various abilities required for individuals to be successful in business and life today (Tutal, 2023).

**Learning and Innovation Skills:** It includes individuals being open to continuous learning, learning new information quickly and using this information creatively (Abbak and Gelisli, 2023).

**Information, Media and Technology Skills:** It covers the abilities of individuals to research, evaluate and use information effectively (Sağlamgöncü, 2023 ).

**Life and Professional Skills:** It covers the general abilities required for individuals to be successful in their daily and professional lives (Yazıcı, 2023).

## 2. THEORETICAL FRAMEWORK

### 2.1. 21st Century Skills
### 2.1.1. Learning and Innovation Skills

Critical thinking: Critical thinking is an important mental skill that involves individuals' ability to evaluate and analyze information, make logical inferences, and develop an independent, critical perspective. Critical thinking requires adopting a questioning, objective, and knowledge-based approach. This skill allows individuals to deeply understand and evaluate the information they encounter from various perspectives, rather than just accepting it (Erten, 2020).

Problem Solving: Problem solving is the process of overcoming difficulties encountered in a situation and achieving goals. In general, problem-solving skills include the ability of an individual to understand the problems he encounters, analyze these problems, evaluate possible solutions and find the most appropriate solution (Çetin and Çetin, 2021).

Creativity and Renewal Skills: Creativity and renewal skills refer to the individual's ability to produce new and original ideas, improve existing situations and adapt to change. These skills play a key role in innovation, problem solving and adaptation processes. Creativity is a feature that stands out and makes a difference in every field, not just limited to the fields of art and design (Göksel and Kobak, 2023).

Communication and Collaboration Skills: Communication and collaboration skills refer to the ability of individuals to communicate effectively and cooperate within a group. These skills are critical to success in today's business and social environments (Ölmez, 2023).

### 2.1.2. Information, Media, and Technology Skills

Information Literacy Skill: Information literacy skill is an important competency that enables individuals to be successful in today's environment where access to information is rapidly increasing, information is diversified and constantly changing. This skill set includes individuals' abilities to access, evaluate, understand, use and critically examine information. First, the ability to access information includes the ability to easily access information from a variety of sources, which is valid in a wide range from libraries to digital platforms (Yazıcı, 2023). Next, the ability to evaluate information involves critically evaluating information for reliability, accuracy, and objectivity. The ability to understand information stands out as understanding complex information and being able to extract basic concepts. The ability to use knowledge includes the ability to apply and adapt acquired knowledge in different contexts. The ability to critically examine information includes the ability to question information, recognize contradictions, and evaluate it from a critical perspective. Finally, information ethics includes the ability to comply with ethical rules in the processes of using and sharing information. These skills are important in a wide range of areas, from individuals' education process to business life, from daily decision-making processes to playing an active role in the information society (Kavak, 2023).

### 2.1.3. Life and Job Skills

Flexibility and Adaptation Skills: Flexibility and adaptation skills refer to the ability of individuals to act effectively in the face of variable situations, uncertainties, and different conditions they encounter. This skill set includes one's ability to get out of routine, adapt quickly to changing conditions, and cope with uncertainty. Flexible thinking capacity includes the ability of individuals to go beyond traditional solutions, evaluate alternative perspectives, and develop creative approaches to problems (Çalışır, Arslan, & Özaslan, 2023).

Initiative and Self-direction Skills: Initiative and self-direction skills include the ability of individuals to act on their own, create new opportunities, and focus on their goals. This skill set includes individuals living and working with a proactive attitude, being able to make decisions on their own and using creative thought processes (Çalışır, Arslan, & Özaslan, 2023).

Social and Intercultural Skills Social and intercultural skills include the ability of individuals to interact with various cultures, empathize, adapt to diversity, and communicate effectively. This skill set improves their ability to understand cultural differences, tolerance, cooperation, and success in intercultural communication. These skills are critical in today's globalized world to interact with different cultures, work in multicultural environments, and communicate effectively at a global level (Çalışır, Arslan, & Özaslan, 2023).

Productivity and Accountability refer to individuals' ability to organize their work, manage time, take responsibility, and complete their work successfully. Productivity and Accountability refer to individuals' ability to organize their work, manage time, take responsibility, and complete their work successfully (Bekar, Nas and Kirman Bilgin, 2023).

Leadership and Responsibility encompasses the ability of individuals to assume a leadership role, direct others, encourage teamwork, and take responsibility. This skill set includes individuals' abilities to develop leadership qualities, work effectively within a team, and contribute to organizational goals.

## 3. METHOD

### 3.1. Research Method
This study was conducted using the relational screening model, which is evaluated within the quantitative research method. The relational survey model refers to an analysis strategy often used in quantitative research. This model focuses on researchers applying statistical analysis to understand relationships between two or more variables. The relational screening model is used to determine correlations, relationships or interactions between variables (Demir and Özcan, 2023).

### 3.2. Population and Sample
The population of the study consists of administrators working in schools in TRNC. The population of the study was selected by simple random sampling method. Simple random sampling is a sampling method in which everyone from a population has an equal probability of being selected. In this method, everyone has the same chance of being selected compared to others, so everyone has an equal probability of being represented in the population. The reason why it is called simple random sampling is that the probability of selecting any individual is no different from another. This sampling method can be explained with a box analogy where each element in the population can be thought of as a cup or a raffle ball (Demir and Özcan, 2023). In this context, the sample of the study consisted of 105 managers.

### 3.3. Data Collection Tools
The data of the study were collected from the personal information form and Education Managers 21st Century. It was collected with the Skills Scale.

"Educational Administrators 21st Century Skills Scale," developed by Çoban, Bozkurt and Kan (2019), was created to evaluate the 21st century skills of educational administrators based on teacher perceptions. The scale was designed using a 5-point Likert -type scale indicating the frequency of skill demonstration, where responses are expressed as " 1 - Not at all, 2 - Little, 3 - Moderately, 4 - A lot, 5 - Completely".

The scale includes three main dimensions and 12 themes in total. The "Learning and Innovation Skills" sub-dimension consists of a total of 39 items, including Creativity and Innovation, Critical Thinking and Problem Solving, Communication and Collaboration. The "Literacy Skills" sub-dimension consists of 17 items: Information Literacy, Media Literacy and Technology Literacy. The "Life and Professional Skills" sub-dimension consists of a total of 39 items: Self-Management and Taking Initiative, Productivity and Accountability, Leadership and Responsibility, Flexibility and Adaptability, Social and Cultural Skills.

Reliability and validity analyze of the scale were conducted and Cronbach Alpha coefficient was determined as .99, Spearman Brown coefficient was .98 and Guttman coefficient was .98. CFA results showed that the scale had reliable and usable values (X2/ sd = 9903.26/4449= 2.22; CFI = .99; NFI = .99; NNFI = .99; SRMR = .032; RMSEA = 0.070). Cronbach Alpha coefficients in sub-dimensions; It varies between .89 and .94 in the learning and innovation skills sub-dimension, between .78 and .86 in the literacy skills sub-dimension, and between .88 and .92 in the life and professional skills sub-dimension. These results show that the scale is a reliable and valid tool to evaluate the 21st century skills of educational administrators. The reliability analysis of the scale in this study is given in Table 1.

Table 1. Reliability Analysis

| Cronbach's Alpha | Article |
|---|---|
| 0.871 | 95 |

The Cronbach Alpha coefficient of the scale was calculated as 0.871. This value shows that the internal consistency of the scale is high, and the measured concept is evaluated reliably.

### 3.4. Analysis of Data
Within the scope of the research, data analysis steps were carried out using the SPSS 28 package program. Parametric methods such as descriptive statistics, t test and ANOVA test were adopted in the statistical analysis of the data. The focus has been to consider the skewness and kurtosis values of the scales when choosing parametric tests. The fact that these values were between +2 and -2 indicated that the variables in the data set met normal distribution conditions. In this context, parametric tests were preferred in accordance with the main purpose of the research and the analyzes were built on this basis. Statistical methods were used to examine meaningful relationships and differences between different variables in the data set, serving the purpose of the research.

## 4 . RESULTS
### 4.1. Demographic features
Demographic variables of the participants are given in Table 2.

Table 2. Demographic Information

|  |  | N | % |
|---|---|---|---|
| Gender | Male | 71 | 67.6 |
|  | Woman | 34 | 32.4 |
| marital status | Married | 64 | 61.0 |
|  | Single | 41 | 39.0 |
| Age | 22-30 years old | 12 | 11.4 |
|  | 31-40 years old | 50 | 47.6 |
|  | 41-50 years old | 33 | 31.4 |
|  | 51-60 years old | 10 | 9.5 |
| professional seniority | 0-10 years | 49 | 46.7 |
|  | 11-15 years | 17 | 16.2 |
|  | 16-20 years | 17 | 16.2 |
|  | 21-25 years | 10 | 9.5 |
|  | 26 years and above | 12 | 11.4 |
|  | Total | 105 | 100.0 |

When the gender distribution in this group consisting of a total of 105 people is examined, it is seen that 67.6% of the participants are men and 32.4% are women. In terms of marital status, 61.0% of people in the group are married and 39.0% are single. Considering the age distribution of the participants, 11.4% are between 22-30 years old, 47.6% are between 31-40 years old, 31.4% are between 41-50 years old and 9.5% are 51-51 years old. He is between 60 years old. In terms of professional seniority, 46.7% of the participants have 0-10 years, 16.2% have 11-15 years, 16.2% have 16-20 years, 9.5% have 21-25 years and 11.4% have 26 years or more of experience.

### 4.2. School Managers 21st century Regarding Your Skills their attitudes

Table 3. School Managers 21st century Regarding Your Skills to their attitudes aimed at Results

|  | Min. | Max . | mean | ss |
|---|---|---|---|---|
| Creativity and Innovation | 26 | 39 | 33.2571 | 2.49626 |
| Critical Thinking and Problem Solving | 36 | 54 | 45,019 | 3.65056 |
| Communication | 30 | 47 | 41.0577 | 3.56854 |
| Partnership | 26 | 40 | 34.3714 | 2.94585 |
| **Learning and Innovation Skills** | 124 | 175 | 153.7308 | 9.80512 |
| Information literacy | 18 | 29 | 25.7596 | 2.16546 |
| Media literacy | 17 | 30 | 23.8857 | 2.2842 |
| Technology literacy | 13 | 25 | 19.8667 | 2.62043 |
| **Literacy Skills** | 50 | 81 | 69.5192 | 5.71658 |
| Self-Management and Taking Initiative | 28 | 45 | 36.6442 | 3.64949 |
| Productivity and Accountability | 26 | 43 | 36.3333 | 3.01173 |
| Leadership and Responsibility | 24 | 44 | 36.5192 | 3.40753 |
| Social and Cultural Skills | 15 | 25 | 20.9429 | 2.1341 |
| **Life and Professional Skills** | 94 | 151 | 130.3942 | 9.0858 |

painting , school 21st century managers to your skills aimed at their attitudes including various in categories values shows . Creativity And renewal in the field , managers attitude between 26 and 39 changing with values measured , average attitude is 33.2571. critical thinking and problem solving skills about minimum attitude of managers 36, maximum attitude is 54 and the average values are 45,019. Communication in your skills average attitude is 41.0577, this minimum in the area and maximum attitude are 30 and 47 respectively . Work union about minimum 26, maximum 40 and The average is 34.3714 has been determined . Learning And innovation skills minimum 124, maximum 175 and The average is 153.7308 measured. Information literacy In the field, the minimum is 18, the

maximum is 29, and the average is 25.7596. Media literacy minimum 17, maximum 30 and The average is 23.8857 has been determined. Technology literacy Minimum attitude in the field is 13, maximum attitude 25 and The average is 19.8667. Literacy _ skills across minimum attitude of managers is 50, maximum attitude 81 and The average is 69.5192. Self-management and initiative use minimum 28, maximum 45 and The average is 36.6442 measured. Productivity And accountability Minimum attitude in the field is 26, maximum attitude 43 and The average is 36.3333. Leadership And responsibility minimum 24, maximum 44 and The average is 36.5192 has been determined. Social And cultural minimum 15 in skills, maximum 25 and The average is 20.9429. Finally, life _ And vocational skills minimum 94, maximum 151 and The average is 130.3942 measured.

### 4.3 . School Administrators' Gender and Attitudes Towards 21st Century Skills

H1 : School administrators' attitudes towards 21st century skills differ depending on their gender.
H0 : School administrators ' attitudes towards 21st century skills do not differ according to their gender.

Table 4. Comparison of School Administrators' Attitudes Towards 21st Century Skills According to the Gender of the Administrators (T-Test)

|  |  | N | mean | ss | f | p |
|---|---|---|---|---|---|---|
| **Learning and Innovation Skills** |  |  |  |  |  |  |
| Creativity and Innovation | Male | 71 | 33.0282 | 2.34199 | 1,417 | 0.237 |
|  | Woman | 34 | 33.7353 | 2.76678 |  |  |
| Critical Thinking and Problem Solving | Male | 71 | 44.7887 | 3.62891 | 0.174 | 0.678 |
|  | Woman | 34 | 45.5000 | 3.70299 |  |  |
| Communication | Male | 71 | 41.1268 | 3.49256 | 0.864 | 0.355 |
|  | Woman | 34 | 40.9091 | 3.77793 |  |  |
| Partnership | Male | 71 | 34.4225 | 2.90154 | 0.265 | 0.608 |
|  | Woman | 34 | 34.2647 | 3.07787 |  |  |
| Learning and Innovation Skills (Total) | Male | 71 | 153.3662 | 9.62621 | 0.251 | 0.618 |
|  | Woman | 34 | 154.5152 | 10.28689 |  |  |
| **Literacy Skills** |  |  |  |  |  |  |
| Information literacy | Male | 71 | 25.6620 | 2.08357 | 0.003 | 0.953 |
|  | Woman | 34 | 25.9697 | 2.35166 |  |  |
| Media literacy | Male | 71 | 24.0423 | 2.10738 | 0.911 | 0.342 |
|  | Woman | 34 | 23.5588 | 2.61917 |  |  |
| Technology literacy | Male | 71 | 19.8028 | 2.72355 | 0.700 | 0.405 |
|  | Woman | 34 | 20,0000 | 2.42462 |  |  |
| Literacy Skills (Total) | Male | 71 | 69.5070 | 5.69429 | 0.028 | 0.868 |
|  | Woman | 34 | 69.5455 | 5.85284 |  |  |
| **Life and Professional Skills** |  |  |  |  |  |  |
| Self-Management and Taking Initiative | Male | 71 | 36.3380 | 3.29477 | 2,499 | 0.117 |
|  | Woman | 34 | 37.3030 | 4.29742 |  |  |
| Productivity and Accountability | Male | 71 | 36,1972 | 2.83660 | 0.394 | 0.532 |
|  | Woman | 34 | 36.6176 | 3.37562 |  |  |
| Leadership and Responsibility | Male | 71 | 36.4789 | 3.00884 | 1,250 | 0.266 |
|  | Woman | 34 | 36.6061 | 4.19031 |  |  |
| Social and Cultural Skills | Male | 71 | 21.0563 | 2.17707 | 0.003 | 0.953 |
|  | Woman | 34 | 20.7059 | 2.05278 |  |  |
| Life and Professional Skills (Total) | Male | 71 | 130.0704 | 7.83641 | 4,321 | **0.040** |
|  | Woman | 34 | 131.0909 | 11.43012 |  |  |

p <0.05

According to the results of the analysis, a significant difference was detected between gender in the Life and Professional Skills (Total) category (p<0.05). This shows that female participants achieved higher scores in this skill category compared to men. This difference may indicate that female school administrators' attitudes towards

life and professional skills are generally more positive or that they are stronger in these skill areas. This finding offers an important perspective in terms of understanding and evaluating gender-based differences in the field of education. However, no significant difference was detected between gender in other skill categories, which shows that, in general, school administrators' attitudes towards 21st century skills are similar in terms of gender. In other skill categories, no significant difference was detected between gender ($p>0.05$).

### 4.4. School Administrators' Age and Attitudes Towards 21st Century Skills

H2 : School administrators ꞌ attitudes towards 21st century skills differ according to age.
H0 : School administrators ꞌ attitudes towards 21st century skills do not differ according to age.
Table 5. Comparison of School Administrators' Attitudes Towards 21st Century Skills by Age (ANOVA- ANOVA Tukey test)

|  |  | N | Cover. | ss | f | p. |
|---|---|---|---|---|---|---|
| **Learning and Innovation Skills** |  |  |  |  |  |  |
| Creativity and Innovation | 22-30 years old | 12 | 34.8333 | 2.20880 | 1,986 | 0.121 |
|  | 31-40 years old | 50 | 32.9600 | 2.44916 |  |  |
|  | 41-50 years old | 33 | 33.0606 | 2.51171 |  |  |
|  | 51-60 years old | 10 | 33.5000 | 2.63523 |  |  |
| Critical Thinking and Problem Solving | 22-30 years old | 12 | 46.8333 | 4.01889 | 1,270 | 0.289 |
|  | 31-40 years old | 50 | 44.7200 | 3.61426 |  |  |
|  | 41-50 years old | 33 | 44.6667 | 3.65434 |  |  |
|  | 51-60 years old | 10 | 45.5000 | 3.17105 |  |  |
| Communication | 22-30 years old | 12 | 42.3333 | 2.70801 | 1,412 | 0.244 |
|  | 31-40 years old | 50 | 40.5000 | 3.50073 |  |  |
|  | 41-50 years old | 33 | 41.1212 | 3.88714 |  |  |
|  | 51-60 years old | 10 | 42.4000 | 3.37310 |  |  |
| Partnership | 22-30 years old | 12 | 35.9167 | 3.50216 | 2,458 | 0.067 |
|  | 31-40 years old | 50 | 33.7400 | 2.83427 |  |  |
|  | 41-50 years old | 33 | 34.4242 | 2.83979 |  |  |
|  | 51-60 years old | 10 | 35.5000 | 2.46080 |  |  |
| Learning and Innovation Skills (Total) | 22-30 years old | 12 | 159.9167 | 10.04045 | 2,677 | **0.0410** 22-30 years old >31-40 years old |
|  | 31-40 years old | 50 | 151.9200 | 8.96670 |  |  |
|  | 41-50 years old | 33 | 153.3030 | 10.39677 |  |  |
|  | 51-60 years old | 10 | 156.9000 | 8.60814 |  |  |
| **Literacy Skills** |  |  |  |  |  |  |
| information literacy | 22-30 years old | 12 | 26.6667 | 1.49747 | 1,625 | 0.188 |
|  | 31-40 years old | 50 | 25.3000 | 2.37547 |  |  |
|  | 41-50 years old | 33 | 25.9394 | 2.04541 |  |  |
|  | 51-60 years old | 10 | 26.1000 | 1.91195 |  |  |
| Media literacy | 22-30 years old | 12 | 24.8333 | 2.48022 | 1,172 | 0.324 |
|  | 31-40 years old | 50 | 23.6800 | 2.15179 |  |  |
|  | 41-50 years old | 33 | 23.6667 | 2.14573 |  |  |
|  | 51-60 years old | 10 | 24.5000 | 3.02765 |  |  |
| Technology literacy | 22-30 years old | 12 | 20.7500 | 3.04884 | 0.835 | 0.478 |
|  | 31-40 years old | 50 | 19.6200 | 2.47345 |  |  |
|  | 41-50 years old | 33 | 20.0909 | 2.61443 |  |  |
|  | 51-60 years old | 10 | 19.3000 | 2.90784 |  |  |
| Literacy Skills (Total) | 22-30 years old | 12 | 72.2500 | 5.84847 | 1,376 | 0.254 |
|  | 31-40 years old | 50 | 68.6000 | 5.39841 |  |  |
|  | 41-50 years old | 33 | 69.6364 | 5.80850 |  |  |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 51-60 years old | 10 | 69.9000 | 6.48845 | | |

**Life and Professional Skills**

| | | | | | | |
|---|---|---|---|---|---|---|
| Self-Management and Taking Initiative | 22-30 years old | 12 | 39.5000 | 3.45096 | | **0.028** |
| | 31-40 years old | 50 | 36.2000 | 3.25764 | 3,134 | 22-30 years old >31-40 years old |
| | 41-50 years old | 33 | 36.4848 | 4.04754 | | |
| | 51-60 years old | 10 | 35.7000 | 3.09300 | | |
| Productivity and Accountability | 22-30 years old | 12 | 36.6667 | 3.05505 | | |
| | 31-40 years old | 50 | 36.3800 | 2.87061 | 0.788 | 0.503 |
| | 41-50 years old | 33 | 35.8182 | 3.44106 | | |
| | 51-60 years old | 10 | 37.4000 | 2.01108 | | |
| Leadership and Responsibility | 22-30 years old | 12 | 37.3333 | 3.17185 | | |
| | 31-40 years old | 50 | 35.9800 | 3.36543 | 1,219 | 0.307 |
| | 41-50 years old | 33 | 36.6061 | 3.48155 | | |
| | 51-60 years old | 10 | 37.9000 | 3.34830 | | |
| Social and Cultural Skills | 22-30 years old | 12 | 22.2500 | 1.65831 | | |
| | 31-40 years old | 50 | 20.9600 | 2.04001 | 2,334 | 0.078 |
| | 41-50 years old | 33 | 20.3939 | 2.46145 | | |
| | 51-60 years old | 10 | 21,1000 | 1.28668 | | |
| Life and Professional Skills (Total) | 22-30 years old | 12 | 135.7500 | 8.76071 | | |
| | 31-40 years old | 50 | 129.5200 | 7.61374 | 1,982 | 0.121 |
| | 41-50 years old | 33 | 128.9697 | 11.11723 | | |
| | 51-60 years old | 10 | 132.1000 | 7.24875 | | |

According to the analysis results, no significant difference was detected between age groups in terms of school administrators' attitudes towards 21st century skills (p>0.05). This shows that attitudes are similar across age groups. However, some notable differences emerged within certain skill categories. It was observed that the 22-30 age group received higher scores than the 31-40 age group in the Learning and Innovation Skills category. This may indicate that younger managers have a more positive attitude towards creativity, innovation, and learning. In addition, it was observed that the 22-30 age group received higher scores than the 31-40 age group in the Self-Management and Initiative Skills category. This may indicate that young managers focus more on their own management and entrepreneurship.

### 4.5. The Relationship Between 21st Century Skills Sub-Dimensions
This correlation analysis was conducted to understand the relationships between school administrators' attitudes towards 21st century skills. The values in the table indicate the relationships between skill sub-dimensions.

Table 6. Correlation Analysis of 21st Century Skills Sub-Dimensions

| | | information literacy | Media literacy | Technology literacy | Literacy Skills (Total) | Self-Management and Taking Initiative | Productivity and Accountability | Leadership and Responsibility | Social and Cultural Skills | Life and Professional Skills (Total) |
|---|---|---|---|---|---|---|---|---|---|---|
| Creativity and Innovation | r | .330 ** | .238 * | .390 ** | .399 ** | .636 ** | .492 ** | .327 ** | .494 ** | .653 ** |
| | p. | 0.001 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| Critical Thinking and Problem Solving | r | .356 ** | .474 ** | .519 ** | .565 ** | .406 ** | .419 ** | .341 ** | .379 ** | .524 ** |
| | p. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Communication | r | .413 ** | .653 ** | .290 ** | .548 ** | ,310 ** | .239 * | .471 ** | .327 ** | .447 ** |
| | p. | 0.000 | 0.000 | 0.003 | 0.000 | 0.001 | 0.014 | 0.000 | 0.001 | 0.000 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Partnership | r | .483 ** | .422 ** | .459 ** | .564 ** | .346 ** | .434 ** | .290 ** | .514 ** | .516 ** |
| | p. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.000 |
| **Learning and Innovation Skills** | r | .513 ** | .605 ** | .537 ** | .683 ** | .531 ** | .502 ** | .471 ** | .543 ** | .681 ** |
| | p. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

When the correlation analysis results in the table are examined, clear relationships are observed between the 21st century skills sub-dimensions. In the evaluations in the Creativity and Innovation category, the relationship with information literacy (r=0.330, p=0.001) and media literacy (r=0.238, p=0.015) are statistically significant. This shows that these skill sets are positively related to each other. In the analysis conducted on the Critical Thinking and Problem-Solving dimension, it was observed that the correlation with media literacy (r=0.474, p=0.000) and the relationship with technology literacy (r=0.519, p=0.000) were highly linked to other skills. Additionally, a significant correlation was detected between the total skill in this category and self-management and initiative use (r=0.406, p=0.000). According to the results of the correlation analysis under communication skills, the high correlation with media literacy (r = 0.653, p = 0.000) and the correlation with self-management and taking initiative (r = 0.310, p = 0.001) are remarkable. This shows that communication skills have a strong relationship with other skill areas.

collaboration skills, correlations with information literacy, media literacy and technology literacy were found to be high. This skill set demonstrates a particularly strong connection to other skill areas. A significant relationship was determined between self-management and initiative and cooperation skills (r = 0.346, p = 0.000).

Correlation analysis in the Learning and Innovation Skills (Total) category reveals that the overall skill set is strongly interrelated. In this context, significant correlations were detected between information literacy, media literacy, technology literacy and learning and innovation skills (r=0.513-0.605, p=0.000). The relationship with self-management and taking initiative is also striking (r=0.531, p=0.000). These correlation analysis results show that school administrators interact with each other in terms of 21st century skills and that it is important to evaluate this skill set in a holistic structure.

## CONCLUSION AND RECOMMENDATIONS

This study was conducted to evaluate school administrators' attitudes towards 21st century skills. At the end of the research, it is observed that managers generally have a high attitude. Particularly high scores were obtained in critical areas such as critical thinking, problem solving, communication, collaboration, learning and innovation skills. This reflects that school administrators attach great importance to contemporary skills to meet the needs of students and the school community. In addition, a strong attitude was demonstrated in personal development and leadership-oriented skill areas such as self-management and initiative, productivity and accountability, leadership, and responsibility. However, the table also shows that there is a certain awareness in areas such as information literacy, media literacy, and technology literacy. It may be important to further strengthen attitudes in these areas and promote a deeper understanding of digital literacy and knowledge management. As a result, the table, as a tool to evaluate school administrators' attitudes towards 21st century skills, provides an important resource that can be used to identify development areas and create strategic guidelines.

In the analysis made on gender basis, a significant difference was detected in the Life and Professional Skills category. The fact that female participants obtained higher scores in this category may suggest that female school administrators' attitudes towards life and professional skills are generally more positive or stronger. However, no significant difference was found between gender in other skill categories, which shows that, in general, school administrators' attitudes towards 21st century skills are similar in terms of gender.

No significant differences were found overall in the analysis between age groups, but some notable differences emerged in certain skill categories. It was observed that young managers received higher scores, especially in the Learning and Innovation Skills and Self-Management and Initiative Skills categories. This may suggest that younger managers have a more positive attitude towards creativity, innovation and learning, and a greater focus on their own management.

When looking at the relationships between the Creativity and Innovation sub-dimension and other sub-dimensions, positive correlations were observed with information literacy, media literacy, technology literacy and total literacy skills. Additionally, this subscale is strongly related to Self-Management and Initiative, Productivity and Accountability, Leadership and Responsibility, Social and Cultural Skills, and Life and Vocational Skills (Total). The Critical Thinking and Problem-Solving subscale similarly exhibits positive correlations with other skill subscales. These relationships with information literacy, media literacy, technology literacy and total literacy skills attract attention. It also shows a strong link to Self-Management and Initiative, Productivity and Accountability, Leadership and Responsibility, Social and Cultural Skills, and Life and Vocational Skills (Total). A positive

relationship was observed with the communication sub-dimension, information literacy, media literacy and literacy skills. It is also linked to Self-Management and Initiative, Productivity and Accountability, Leadership and Responsibility, Social and Cultural Skills, and Life and Vocational Skills (Total). Finally, the Collaboration subscale is strongly associated with information literacy, media literacy, technology literacy, and total literacy skills. It also shows positive correlations with Self-Management and Initiative, Productivity and Accountability, Leadership and Responsibility, Social and Cultural Skills, and Life and Vocational Skills (Total). These findings indicate that school administrators' attitudes towards 21st century skills are internally consistent with each other and that there is a strong interaction between these skills.

Based on the results, further research can be conducted on the reasons why female school administrators receive higher scores in the Life and Professional Skills category. Additionally, special support and training programs can be developed to understand and evaluate gender-based differences in school management. If a clear trend is detected in the Critical Thinking and Problem-Solving category, school administrators can be offered special training and development opportunities in these areas. Workshops or training programs can be organized to strengthen problem-solving skills. Additionally, in categories where young managers stand out (Learning and Innovation, Self-Management and Using Initiative), mentoring programs can be created for these groups. These recommendations suggest that if similar attitudes have been identified across age groups, school management policies and educational programs can be designed to take this diversity into account. Additionally, platforms can be created to encourage collaboration and information sharing between managers in different age groups. Continuing professional development programs for school administrators at all levels can focus on strengthening 21st century skills. Finally, courses and seminars can be organized to support education managers to adapt to new trends and changing needs. These suggestions can be applied to evaluate and improve school administrators' attitudes towards 21st century skills based on the analysis results more effectively.

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