

## **DISTANCE EDUCATION IN THE COVID-19 PANDEMIC PROCESS: INFORMATION TECHNOLOGIES STUDENTS**

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### **ABSTRACT**

The aim of this research is to determine the views of 60 students studying in the field of information technologies in the 10th grade regarding distance education during the Covid-19 pandemic process. A questionnaire was developed through Google forms. The content validity of the questionnaire was provided by the opinions of two experts in the field of distance education. The reliability coefficient is 0.64. As a result of the research, there were no significant differences between male and female students in their views on distance education. The students did not want to continue their education through distance education. In this study, most of the students' mothers are housewives and their education is at the basic level. In terms of female students, even sharing responsibilities with the mother in housework can cause negative thoughts about distance education. On the other hand, it was determined that the views of the students on distance education did not change according to the profession of the parents, and the education level of the parents. It has been observed that it varies according to the status of having a computer with internet connection at home. Suggestions were made in line with these results.

**Keywords:** Covid-19, information technology, female students and distance education, vocational.

### **INTRODUCTION**

The Covid-19 virus, which emerged in China in 2019, spread very quickly, causing a worldwide pandemic and negatively affecting education activities around the world, making face-to-face education impossible and making distance education compulsory (Ceviz, Tektaş, Basmacı and Tektaş, 2020).

What kind of changes are experienced in education during this epidemic process, how students are affected by this process and their views on distance education are very important in establishing and maintaining distance education programs. In this context, there are many national (Sarı & Nayır, 2020; Canpolat and Yıldırım, 2021; Yaman, 2021; Arık; Karakaya, Çimen and Yılmaz, 2021; Yavuz, Kayalı, Balat and Karaman, 2020) and international studies (Cicha, Rizun, Rutecka and Strzelecki, 2021; Zhou, Li, Wu, S, & Zhou, 2020; Marek, Chew and Wu, 2021; Sintema, 2020).

### **LITERATURE REVIEW**

A quality distance learning is closely related to good planning and structure, active student participation, learner centeredness, interaction and problem solving (Turkoglu, 2003). On the other hand, the effectiveness of a technology-based education, it requires instructors to have knowledge and skills related to technology as well as content knowledge (Koehler,

Misra, 2009; Ersoy, 2004; Naralan, 2008; Kaynar, Kurnaz, Doğrukök and Şentürk Barışık,2020). Along with the pandemic, many educational institutions and lecturers needed information on the teaching of courses through distance education and the use of online education tools (Karip, 2020; Çetinkaya-Aydın, 2020). On the other hand, in terms of students, it was seen that students, especially female students, faced many difficulties during the pandemic process. Just as the pandemic has exposed general social inequalities and discriminations, the distance education model has also revealed inequalities on the basis of students. Availability of technological devices, tools, sufficient financial means and suitable conditions at home for distance education; The inability of female students and male students to benefit from distance education on equal terms during the implementation of this model can be counted among these (Şahin, 2021). One of the reasons for this, according to the UNICEF report is that adolescent girls devote significantly more hours to housework than their male peers (UNICEF, 2020). Therefore, in general, as a result of the measures taken during the pandemic process such as continuing education from a distance, there has been a concern that female students will not be able to put enough effort into their education and the rates of interrupting or leaving their education will increase during and after this process (Şahin 2021). According to the United Nations Report, the closure of schools does not only mean that girls do more housework at home, but may also cause millions of girls to drop out of school before completing their education. This is especially true for girls who live in poverty, have a disability, or live in rural, remote areas (UN, 2020). In this context, Özer (2020) states that the socio-economic, digital and information literacy differences of students open up the results of distance education practices to discussion (Özer, 2020). Eygü and Karaman (2013) stated that students' views on distance education stem from demographic differences. Kırallı & Alıcı (2016) expressed that there is no statistically significant difference between male and female students in their views on distance education, but male students have more positive views on distance education than females. Akpolat (2021) stated that female students found distance education more individual effort, non-interactive, saving, enabling and unproductive than male students. In addition, Birişçi (2013) stated that in general, most of the students have negative opinions about distance education. Metin, Karaman, and Şaştım (2017) stated that students have negative thoughts about distance education, but if internet access is provided, students' thoughts will change. These studies show that female students' views on distance education are closely related to the opportunities they have.

Since 1980, computers and products based on computer technology have been used extensively in the production process. Information technologies have become an indispensable part of the working environments at every stage of the production process in enterprises, from production to storage and classification, to information transfer (Ecevit, Hoşgör ve Tokluoğlu, 2003). The problems in the relationship between technology and women, likewise, continue to be observed in the relationship between Information Technology (IT) and women as a sub-field. Traditionally, women are not seen as "close" and "prone" to technology, but gain importance as a user and consumer of technology products. However, this importance is shaped around the roles assigned to women such as motherhood and housewife (Göker, 2003). In this context, in order to ensure continuity in terms of development and growth in information technologies, not to consider women only as complements to men; It is an important approach to provide women with equal opportunities in the field of education and employment.

This study was not designed specifically for female students, it was examined that students' views on distance education in general and whether these views change according to their gender, education of parents and profession of parents. There is no study in the literature to determine the views of vocational high school information technology students (VHSITS) towards distance education. It is thought that this study will contribute to the literature

with this dimension. On the other hand, based on the learner-centered approach, learners' views on distance education are of great importance in restructuring and increasing the effectiveness of programs in this field of education. Due to the fact that only 25% of the students participating in the study were female, the effects of distance education on students during the pandemic process could not be discussed in terms of women. However, with a qualitative study including semi-structured interview questions, the views of these women on distance education can be discussed in depth. This qualitative study can be considered as a continuation of the research.

## METHOD

The purpose of this study is to evaluate the views of 10th grade students studying in the field of information technologies regarding distance education during the Covid-19 pandemic process. In this direction, the sub-objectives of the study are given below.

1. What are the demographic characteristics of VHSITS?
2. Do VHSITS' views on distance education change according to gender?
3. Do the opinions of VHSITS on distance education differ according to the education level of the parents?
4. Do the opinions of VHSITS about distance education differ according to the professions of the parents?
5. Do the opinions of VHSITS on distance education change according to the situation of having a computer with internet connection at home?

## Research Pattern

In the research, the descriptive relational scanning model was used. Descriptive survey model; it is a method in which groups are studied and the attitudes and opinions of the people in the group about a phenomenon, event or situation are tried to be described as they are (Karasar, 2008; Aydođdu, Karamustafaođlu, & Bülbul, 2017). The study was carried out in relational survey model in order to determine the views of VHSITS on distance education and whether these views change according to the variables. Participants of the study were selected by convenience (easy) sampling. In the suitability sample, the researcher tries to collect data from individuals whom he or she considers to be close or suitable (Ross, 2005). In other words, due to the limitations in terms of time, money and labor in convenient sampling, the sample is selected from easily accessible and applicable units (Büyükoztürk, 2012). In this study, this sampling method was chosen due to isolation during the epidemic process.

## Participants

This study was conducted in a public school in the province of Izmir with a group of 60 students who agreed to participate in the research. Demographic characteristics of VHSITS are given in Table 1 below.

**Table 1:**  
**Demographic characteristics of VHSITS**

| <b>Gender</b>  | <b>N</b>  | <b>%</b>      |
|--|-----------|---------------|
| Female   | 15        | 25,0          |
| Male   | 45        | 75,0          |
| <b>Mother Education Level</b>                                |           |               |
| Elementary and Below   | 39        | 65,0          |
| High School  | 18        | 30,0          |
| University   | 3         | 5,0           |
| <b>Mother's Profession</b>                                   |           |               |
| Housewife  | 46        | 76,7          |
| Worker   | 14        | 23,3          |
| <b>Father Education Level</b>                                |           |               |
| Elementary and Below   | 36        | 60,0          |
| High School  | 17        | 28,3          |
| University   | 7         | 11,7          |
| <b>Father's Profession</b>                                   |           |               |
| Self-Employment  | 13        | 21,7          |
| Officer  | 3         | 5,0           |
| Small Business   | 17        | 28,3          |
| Chauffeur  | 4         | 6,7           |
| Manager  | 3         | 5,0           |
| Retired  | 8         | 13,3          |
| Employee   | 10        | 16,7          |
| Engineer   | 2         | 3,3           |
| <b>Having Internet and Computer</b>                          |           |               |
| Yes  | 44        | 73,3          |
| No   | 16        | 26,7          |
| <b>Experiencing Technical Problems</b>                       |           |               |
| Yes  | 39        | 65,0          |
| No   | 21        | 35,0          |
| <b>Difficulty In Attending Courses In Distance Education</b> |           |               |
| Yes  | 33        | 55,0          |
| No   | 27        | 45,0          |
| <b>Total</b>   | <b>60</b> | <b>100,00</b> |

According to Table 1, considering the gender of the students participating in the research; It was observed that 25% of the students were female, 65% of the mothers of the students were primary school graduates and below, and 5% of them were university graduates. 76.7% of mothers are housewives. In addition, 60% of the fathers of the students are primary school graduates and below, 11.7% of them are university graduates. 28.3% of fathers are tradesmen and 3.3% are engineers.

It was observed that 73.3% of the students had a computer connected to the internet at home, 65% had technical problems while attending distance education, and 55% had difficulties in attending classes with distance education.

### **Data Collection Tool**

The research questionnaire consists of a total of 19 questions prepared with google forms. In order to ensure the content validity of the questionnaire, the opinions of two experts from the field of distance education were taken. In this study, the reliability coefficient

(Cronbach's Alpha) of the measurement tool was found to be 0.639. This value shows that the measurement tool has medium reliability (Kılıç, 2016).

### Data Analysis

SPSS 20.0 was used in the analysis of the data collected in the study. Percentage-frequency tables were used for descriptive analysis, and F and t tests were used to find the differences between the means of variables for interpretive statistics.

### FINDINGS

In this section, the answers of 60 students who answered the questionnaire were interpreted within the scope of the research questions.

**Table 2:**  
**Mean Values of Statements towards Distance Education**

| STATEMENTS   | I do not agree | undecided | I agree | Mean |
|--|----------------|-----------|---------|------|
| The duration of courses given in distance education is sufficient.   | %15            | %45       | %40     | 2,25 |
| I find live lessons in distance education boring.  | %16,7          | %30       | %53,3   | 2,37 |
| I can easy access to the resources (books, lesson notes, videos, trial questions) related to my courses in distance education. | %36,7          | %26,7     | %36,7   | 2,00 |
| I have difficult to communicate with my teacher in distance education.   | %50            | %11,7     | %38,3   | 1,88 |
| Only theoretical information about the profession can be provided through distance education.                                  | %23,3          | %38,3     | %38,3   | 2,15 |
| Explaining lessons with visual materials in distance education make it easy to learn.  | %6,7           | %23,3     | %70     | 2,63 |
| I find the homework given in distance education useful.  | %38,3          | %30,0     | %31,7   | 1,93 |
| Through distance education, I understand the subjects better.  | %81,7          | %15,0     | %3,3    | 1,22 |
| I can reach my teacher easier through distance education.  | %53,3          | %15,0     | %31,7   | 1,78 |
| I would like to continue my education through distance education.  | %65,0          | %15,0     | %20,0   | 1,55 |

According to table 2, most of the students (45%) were undecided with the statement "The duration of courses given in distance education is sufficient." 53.3% of students found the live lessons boring. 50% of the students stated that they had no difficulty in communicating with their teachers in distance education. 70% of the students agreed with the statement "Explaining lessons with visual materials in distance education make it easy to learn." 81.7% of students did not agree with the statement "I understand the subjects better with distance education". 53.3 % of the students did not agree with the statement "I can reach my teacher easier through distance education. 65% of students did not want to continue their education through distance education.

### Do VHSITS' views on distance education change according to gender?

A t-test was used to evaluate whether students' views on distance education changed according to the age variable. The results are given in table 3.

**Table 3:**  
Gender variable and students' views on distance education

| Gender | N  | Mean   | Std Deviation | t     | p    |
|--------|----|--------|---------------|-------|------|
| Female | 15 | 1,8333 | ,33           | 1,206 | ,233 |
| Male   | 45 | 1,9578 | ,35           |       |      |

When Table 3 is examined, the opinions of vocational high school information technology students on distance education do not differ according to gender.

### Do the opinions of VHSITS on distance education differ according to the education level of the parents?

It was investigated whether students' views on distance education changed according to the education levels of their parents. The results are given in tables 4 and 5.

**Table 4:**  
The Relationship Between Views on Distance Education and Mother Education Level Anova Analysis

|                | Sum of Squares | Df | Mean Square | F    | P    |
|----------------|----------------|----|-------------|------|------|
| Between Groups | ,192           | 2  | ,096        | ,790 | ,459 |
| Within Groups  | 6,925          | 57 | ,121        |      |      |
| Total          | 7,117          | 59 |             |      |      |

When table 4 is examined, it is seen that the opinions of vocational high school information technology students about distance education do not change according to the education level of their mothers.

**Table 5:**  
The Relationship Between Views on Distance Education and Father Education Level Anova Analysis

|                | Sum of Squares | Df | Mean Square | F    | P    |
|----------------|----------------|----|-------------|------|------|
| Between Groups | ,182           | 2  | ,091        | ,749 | ,477 |
| Within Groups  | 6,935          | 57 | ,122        |      |      |
| Total          | 7,117          | 59 |             |      |      |

\*p<0,05

According to table 5, it is seen that the opinions of vocational high school information technology students about distance education do not change according to the education level of their fathers.

**Do the opinions of VHSITS about distance education differ according to the professions of the parents?**

It was examined whether the views of the students on distance education changed according to the professions of the parents. The results are given in tables 6 and 7.

**Table 6:  
The Relationship Between Views on Distance Education and Mother's Profession T-Test**

| Profession | N  | Mean   | Sd  | t    | p    |
|------------|----|--------|-----|------|------|
| Housewife  | 46 | 1,9500 | ,04 | ,942 | ,350 |
| Worker     | 14 | 1,8500 | ,10 |      |      |

According to table 6, vocational high school information technology students' views on distance education do not differ according to their mothers' profession.

**Table 7:  
The Relationship Between Views on Distance Education and Father's Profession Anova Analysis**

|                | Sum of Squares | Df | Mean Square | F     | P    |
|----------------|----------------|----|-------------|-------|------|
| Between Groups | ,984           | 7  | ,141        | 1,192 | ,324 |
| Within Groups  | 6,133          | 52 | ,118        |       |      |
| Total          | 7,117          | 59 |             |       |      |

\*p<0,05

When table 7 is examined, Vocational high school information technology students' views on distance education do not differ according to their fathers' occupations.

**CONCLUSION AND DISCUSSION**

In this study, which aims to get the opinions of vocational high school Information Technologies students on distance education, the students did not want to continue their education through distance education. In this study, most of the students' mothers are housewives and their education is at the basic level. In terms of female students, even sharing responsibilities with the mother in housework can cause negative thoughts about distance education. On the other hand, this result can also be explained by the fact that the students have not yet gotten used to the change in their education life and routines due to the epidemic and they have the belief that face-to-face education will start again. There are studies that show similar results (Yurtbakan & Akyıldız, 2020; Kaynar, Kurnaz,

Doğrukök and Şentürk Barışık, 2020; Akgül and Oran, 2020; Akpolat, 2021). Researchers stated that students believe that face-to-face education is more beneficial than distance education and that face-to-face interaction is necessary for a good education. It was seen that most of the students were undecided about the adequacy of the course duration. Similarly, students could not express a definite opinion on the adequacy of the duration of the distance courses (Kaynar, Kurnaz, Doğrukök and Şentürk Barışık, 2020). Most of the students found the live lectures boring. Contrary to this result, in Kaynar et al.'s (2020) study, students' satisfaction rates regarding live lessons were high. Most of the students stated that they did not have any difficulties in communicating with their teachers in distance education. Contrary to this study, Bakioğlu and Çevik (2020) concluded in their research that the communication process between teacher and student weakens due to inadequacies in e-learning environments.

Most of the students stated that the lessons explained with visual materials facilitate learning in distance education. In a similar study, students stated that diversifying the study environment would facilitate learning (Akgül&Oran 2020). Most of the students stated that they do not think that they can reach their teachers more easily through distance education. Contrary to this result of the study, students stated that they could reach their teachers more easily in face-to-face education (Yurtbakan& Akyıldız, 2020).

Most of the students stated that they had technical problems in participating in distance education. Akgül &Oran (2020) also stated that students have technical problems in distance education. Similarly, Grant& Cheon (2007) stated that the technical problems experienced in distance education prevent students from actively participating in the lessons. Kaynar, Kurnaz, Doğrukök, and Barışık (2020) revealed that students who do not have connection problems have a more positive view of distance education than those who do.

In the study, a significant difference was found between the opinions of vocational high school information technology students about distance education and the situation of having a computer with internet connection at home. It was seen that students who have a computer with internet connection at home have a more positive view of distance education than students who do not have a computer with internet connection at home.

In the study, no significant difference was found between the views of vocational high school information technology students about distance education and their gender, education level of their parents and their professions. The study of Kaynar, Kurnaz, Doğrukök, and Şentürk Barışık (2020) supports the conclusion on gender. According to Şahin (2021), female students think that they do not benefit from the distance education model carried out during the pandemic process, and most of the students stated that they want to return to face-to-face education.

In line with the results obtained from this study, it can be suggested to conduct qualitative studies on the attitudes of vocational high school informatics students towards distance education. In addition, qualitative studies with female students will yield more effective results in revealing the effect of distance education on female students during the pandemic process.

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