Acta Scientiae et Intellectus
Volume: 10, No: 2, Year: 2024, pp.: 1-9
E-ISSN: 2519-1896
URL: https://actaint.com/

Investigation of Computer Use Skills and Computer Attitudes of Teachers with Different Disability Groups

Murat AGAR[1], Mehmet CEBI[2], Recep Nur UZUN[2], Ali Ihsan CEBI[1]

[1]Ministry of National Education, Samsun, Türkiye
[2]Ondokuz Mayıs University, Yasar Dogu Faculty of Sport Sciences, Samsun, Türkiye

Research Article
DOI: 10.5281/zenodo.13383751

Received: 21.03.2024 *Accepted:* 15.07.2024 *Published*: 28.08.2024

Abstract

The aim of this study is to investigate the computer usage skills and attitudes towards computers of teachers from different disability groups. The population of the study consists of individuals with different disabilities in Samsun. The sample group consists of a total of 200 teachers, 85 male and 115 female, who have any disability. Computer Use Skills and Attitudes Towards Computers Scale and Personal Information Form were used to collect the data. SPSS 28.0 program was used to analyze the data. Kolmogorov-Smirnov test was used to determine the normality of the obtained data, and Independent Sample T-Test and ANOVA test were used to compare the variables. There is no significant difference ($p>0.05$) between men and women in the types of disabilities in the comparison of computer usage skills and attitudes towards computer of teachers in different disability groups according to gender. In the comparison of computer usage skills and attitudes towards computers of teachers in different disability groups according to the place of work, there is a significant difference between the teachers working in the province and district center in Hearing-Visually Impaired and Other Disabilities in Computer Usage Opportunities ($p<0.05$). In addition, there is a significant difference between teachers with other disabilities working in the provincial center and district in the level of use in schools ($p<0.05$). In the comparison of computer use skills and attitudes towards computers of teachers in different disability groups according to age, there is a significant difference between the age groups of teachers with unclassifiable disabilities in the sub-dimensions of Available Facilities, Computer Use Facilities and Level of Use in Schools ($p<0.05$). As a result, in the comparison of computer usage skills and attitudes towards computer of teachers in different disability groups according to age, it was determined that there was a significant difference between the age groups of teachers with unclassifiable disabilities in the sub-dimensions of Available Facilities, Computer Usage Facilities and Level of Use in Schools. In the comparison of computer usage skills and attitudes towards computers of teachers in different disability groups according to the place of work, a significant difference was found between the teachers working in the province and district center in Hearing-Visually Impaired and Other Disabled in Computer Usage Facilities. In the comparison of computer usage skills and attitudes towards computers of teachers in different disability groups according to gender, it was determined that there was no significant difference between men and women.

Keywords: Computer using skills, attitude towards computer, technology, teacher.

INTRODUCTION

Information technologies are developing very rapidly in our country and in the world. Computer use in our country started in the 1990s, grew rapidly and became widespread. For this reason, it is important for individuals to acquire the necessary technology usage skills in order to keep up with technological developments (Yılmaz et al., 2015). The rapid development of science and technology affects the education system as well as various fields. This situation requires the use of new technologies in educational institutions, which play an important role in improving the quality of education (Akkoyunlu & Tuğrul, 2002; Aktümen & Kaçar, 2003). The introduction of computers into the education system, which can be described as "the most effective communication and personalized teaching technology", has brought a new dimension

to the flow of information and has brought new dimensions to the flow of information with changes in school curricula in education and training processes and has led to radical changes in the education system based on the transfer of molded information (Uşun, 2000). Providing pre-service teachers with the ability to use computers plays an important role in the effective use of computers and technology in educational environments (Selwyn, 1997). For education and training activities to be student-centered, computer-assisted teaching methods should be adopted. Students should be taught to produce new information in unusual situations, gain metacognitive skills and utilize scientific problem-solving techniques (Özabacı & Olgun, 2011). Teachers' ability to use computers in the educational process and their attitudes towards these tools are important factors (Deniz, 2000).

According to the World Health Organization, approximately 15 percent of the world's population is people with disabilities. In other words, there are 1 billion people with disabilities in the world and for this reason, people with disabilities are called "the largest minority" in the world (WHO, 2012). It is seen that the number of studies investigating the working environment, teaching process and the problems faced by teachers with disabilities in this large group is not sufficient (Waldrop & Stern, 2003; Oliver, 2017; Tal-Alon & Shapira-Lishchinsky, 2019). Tal-Alon & Shapira-Lishchinsky (2019) investigated the ethical dilemmas faced by teachers with different disabilities (physical disabilities, visual impairments, hearing impairments, health disabilities-chronic diseases) and concluded that it is more difficult for teachers with disabilities to cope with the problems they face in the school environment than dealing with the disability itself. Findings from a small number of studies suggest that teachers with disabilities have a positive impact on students at different teaching levels (Vogel & Sharoni, 2011; Yamak et al., 2015; Parker & Draves, 2018). One example is that students with teachers with disabilities provide more support to people with disabilities (Tal-Alon & Shapira-Lishchinsky, 2019). It is also observed that teachers with disabilities encourage their students more to overcome their difficulties (Makris, 2018).

At the same time, they said that the use of technological tools and applications by teachers with disabilities in learning-teaching processes can help them to participate in the learning-teaching process at an equal level as well as their socialization (Kula et al., 2020). One of the important factors in the learning and teaching process is attitude (Altınok, 2004; Yılmaz & Eliöz, 2022). Attitude is an individual's tendency to behave positively or negatively towards any event, object or situation (Turhan et al., 2008). Attitudes consist of three dimensions (knowledge, belief and behavior). Attitude is basically based on two characteristics. These are

long-term and cognitive, emotional and behavioral patterns. These two characteristics have a dynamic structure and affect each other. The purpose of measuring attitudes in education and training is to predict the behaviors that individuals will exhibit at a certain time or in the future and to change existing behaviors and create new situations based on this (Nuhoğlu, 2008).

Çağıltay et al. (2001) reported in their study that most teachers were very interested in learning how to use computers, but some of them had never used computers and a few had more than two years of computer experience. The aim of this study is to examine the computer using skills and attitudes towards computers of teachers from different disability groups in terms of various variables.

METHOD

Research group

The population of the study consists of individuals with different disabilities in Samsun. The sample group consists of a total of 200 teachers, 85 male and 115 female, who have any disability. Before starting the study, the approval of Samsun Ondokuz Mayıs University Social and Human Sciences Research Ethics Committee was obtained (Date: 28/07/2023 Decision No: 2023/652).

Data collection tools

In the study, the "Computer Use Skills and Attitudes Towards Computers Scale" and the "Personal Information Form", the validity and reliability study of which was conducted by Yeşilyurt and Gül (2007), were used. The scale is a five-point Likert-type rating scale (Strongly disagree=1), (Disagree=2), (Partially agree=3), (Agree=4), (Strongly agree=5). There are no negative statements in the scale. The 26-item scale consists of three factors: "available facilities", "computer usage skills" and "level of use in schools". The total reliability coefficient of the scale is 0.912 and the K.M.O. sampling adequacy measure of the calculated scale is 0.843.

Data analysis

SPSS 28.0 program was used for data analysis. The Kolmogorov-Smirnov test was used to determine the normality of the obtained data, and the Independent Sample T-Test and ANOVA test were used to compare the variables. The significance level was set as 0.05 for the comparison of all variables.

FINDINGS

Table 1. Comparison of computer use skills and attitudes towards computers of teachers in different disability groups according to gender

Sub Dimensions	Disability Type	Gender	n	Mean±S.s	f	t	p
Available Facilities	Physically Disabled	Woman	25	3.01±0.68	3.560	-0.198	0.844
		Male	14	3.06±0.95			
	Hearing-Visually Impaired	Woman	17	2.96±0.60	4.027	1.061	0.299
		Male	11	2.73±0.44			
	Other Disabled	Woman	55	2.75±0.74	0.593	-1.686	0.095
		Male	48	2.97±0.60			
	Unclassifiable	Woman	18	3.02±0.62	0.678	1.272	0.214
		Male	12	2.75±0.47			
Computer Use Facilities	Physically Disabled	Woman	25	3.44±0.60	1.674	-1.159	0.254
		Male	14	3.66±0.55			
	Hearing-Visually Impaired	Woman	17	3.37±0.61	12.869	-2.077	0.020
		Male	11	3.76±0.11			
	Other Disabled	Woman	55	3.30±0.84	1.070	-0.593	0.554
		Male	48	3.40±0.91			
	Unclassifiable	Woman	18	3.48±0.75	2.173	1.115	0.274
		Male	12	3.14±0.87			
Level of Use in Schools	Physically Disabled	Woman	25	2.81±0.78	3.859	-0.903	0.372
		Male	14	3.03±0.59			
	Hearing-Visually Impaired	Woman	17	3.03±0.39	7.002	1.109	0.278
		Male	11	2.89±0.07			
	Other Disabled	Woman	55	2.70±0.88	0.524	0.246	0.806
		Male	48	2.66±0.89			
	Unclassifiable	Woman	18	2.98±0.67	0.610	0.679	0.503
		Male	12	2.82±0.53			

Table 1 shows the comparison of computer use skills and attitudes towards computers of teachers in different disability groups according to gender. In the table . there is no significant difference ($p>0.05$) between men and women in disability types according to sub-dimensions.

Table 2. Comparison of computer use skills and attitudes towards computers of teachers from different disability groups according to their place of work

Sub Dimensions	Disability Type	Place of Duty	n	Mean±S.s	f	t	p
Available Facilities	Physically Disabled	Province Center	13	3.11±0.47	11.462	0.483	0.559
		District	26	2.98±0.09			
	Hearing-Visually Impaired	Province Center	19	2.83±0.58	0.244	-0.546	0.590
		District	9	2.95±0.47			
	Other Disabled	Province Center	54	2.80±0.68	0.522	-0.812	0.419
		District	49	2.91±0.69			
	Unclassifiable	Province Center	7	2.83±0.86	2.057	-0.378	0.709
		District	23	2.93±0.48			
Computer Use Facilities	Physically Disabled	Province Center	13	3.43±0.42	5.770	-0.636	0.467
		District	26	3.56±0.65			
	Hearing-Visually Impaired	Province Center	19	3.34±0.52	6.858	-3.097	**0.001**
		District	9	3.91±0.19			
	Other Disabled	Province Center	54	3.07±0.99	12.650	-3.655	**0.001**
		District	49	3.66±0.57			
	Unclassifiable	Province Center	7	3.63±0.85	0.198	1.079	1.079
		District	23	3.26±0.78			
Level of Use in Schools	Physically Disabled	Province Center	13	2.76±0.37	13.041	-0.744	0.355
		District	26	2.95±0.84			
	Hearing-Visually Impaired	Province Center	19	2.99±0.37	3.313	0.338	0.738
		District	9	2.95±0.12			
	Other Disabled	Province Center	54	2.48±0.86	0.030	-2.413	**0.018**
		District	49	2.90±0.86			
	Unclassifiable	Province Center	7	3.00±0.75	1.109	0.394	0.394
		District	23	2.89±0.58			

Table 2 shows the comparison of computer usage skills and attitudes towards computers of teachers in different disability groups according to their place of work. According to the table there is a significant difference between the teachers working in the provincial and district center in Hearing-Visually Impaired and Other Disabled in Computer Use Opportunities

($p<0.05$). In addition, there is a significant difference between the teachers working in the provincial center and district for the Other Disabled in the Level of Use in Schools ($p<005$).

Table 3. Comparison of computer use skills and attitudes towards computers of teachers in different disability groups according to age

Sub Dimensions	Disability Type	Age	n	Mean±S.s	f	t	p
Available Facilities	**Physically Disabled**	Between 20-30 Years	19	3.00±0.86	0.006	-0.171	0.865
		31 Years and Over	20	3.05±0.71			
	Hearing-Visually Impaired	Between 20-30 Years	23	2.84±0.55	0.012	-0.510	0.510
		31 Years and Over	5	3.02±0.54			
	Other Disabled	Between 20-30 Years	58	2.84±0.62	1.130	-0.184	0.854
		31 Years and Over	45	2.87±0.76			
	Unclassifiable	Between 20-30 Years	12	2.48±0.52	1.223	-4.058	**0.001**
		31 Years and Over	18	3.19±0.42			
Computer Use Facilities	**Physically Disabled**	Between 20-30 Years	19	3.63±0.63	0.184	1.207	0.235
		31 Years and Over	20	3.41±0.53			
	Hearing-Visually Impaired	Between 20-30 Years	23	3.46±0.55	4.771	0.016	0.203
		31 Years and Over	5	3.80±0.121			
	Other Disabled	Between 20-30 Years	58	3.21±0.79	2.745	-1.848	0.068
		31 Years and Over	45	3.53±0.94			
	Unclassifiable	Between 20-30 Years	12	2.84±0.90	5.277	-3.233	**0.003**
		31 Years and Over	18	3.68±0.52			
Level of Use in Schools	**Physically Disabled**	Between 20-30 Years	19	3.07±0.80	6.057	1.529	0.135
		31 Years and Over	20	2.72±0.60			
	Hearing-Visually Impaired	Between 20-30 Years	23	2.98±0.34	3.278	0.191	0.850
		31 Years and Over	5	2.95±0.06			
	Other Disabled	Between 20-30 Years	58	2.65±0.76	5.261	-0.438	0.674
		31 Years and Over	45	2.72±1.02			
	Unclassifiable	Between 20-30 Years	12	2.41±0.63	8.430	-4.859	**0.001**
		31 Years and Over	18	3.25±0.29			

Table 3 shows the comparison of computer usage skills and attitudes towards computers of teachers in different disability groups according to age . According to the table, there is a significant difference between the age groups of teachers with unclassifiable disabilities in the

sub-dimensions of Available Facilities, Computer Use Facilities and Level of Use in Schools ($p<0.05$).

DISCUSSION AND CONCLUSION

In the information age we live in, there is a need for individuals who think critically, creatively and can access information. Today, with the rapid changes and developments in technology, it is possible to access all kinds of information easily. In this context, the importance of the computer, which is one of the technological developments, in the dissemination and sharing of information is an undeniable fact. Rapid changes and developments in science and technology offer new opportunities in the field of education (Demirli & Dikici, 2003). It is especially important for teachers, who are one of the groups responsible for the education of a generation, to keep up with technological developments and improve themselves in this field. For this reason, it is necessary to compare and examine teachers' computer usage skills and attitudes towards computers according to different demographic characteristics.

In the comparison of computer usage skills and attitudes towards computers of teachers in different disability groups according to age, it was found that there was a significant difference between the age groups of teachers with unclassifiable disabilities in the sub-dimensions of Available Facilities, Computer Usage Facilities and Level of Use in Schools. In the comparison of computer usage skills and attitudes towards computers of teachers in different disability groups according to the place of work, a significant difference was found between the teachers working in the province and district center in Hearing-Visually Impaired and Other Disabled in Computer Usage Facilities. In the comparison of computer use skills and attitudes towards computers of teachers in different disability groups according to gender, it was found that there was no significant difference between men and women. Looking at the literature, Dinçer (2011) examined the relationship between the gender of students and their computer usage skills, but no significant difference was found between computer usage skills and gender. Çevik-Kılıç (2015) found that there was no statistically significant difference between students' computer usage skills and attitudes towards computers according to gender. Güler and Sağlam (2002) stated in their study that attitude towards computers did not vary according to gender. The results of the data in the literature and the results of this study are similar.

References

Akkoyunlu, B., & Tuğrul, B. (2002). The Effect of technological interactions of preschool children in home life on computer literacy skills. *Hacettepe University Journal of Faculty of Education, 23*, 12-21.

Aktümen, M., Kaçar, A. (2003). The role of computer assisted instruction in teaching operations with letter expressions in 8th grades and evaluation of student opinions on computer assisted instruction. *Kastamonu Journal of Education, 2*, 339-358.

Altınok, H. (2004). Students' perceptions of teachers' attitudes towards science teaching and students' attitudes and motivations towards science course. *Hacettepe University Journal of Educational Sciences, 26* ,1-8.

Çağıltay, K., Çakıroğlu, J., Çağıltay, N., & Çakıroğlu, E. (2001). Teachers' opinions on the use of computer in teaching. *Hacettepe University Journal of Faculty of Education 21*, 19-28.

Demirli, C., & Dikici, A. (28-30 May 2003). The effect of web-based applications on student achievement in teaching, *Third International Education Technologies Symposium, 2,* 822.

Deniz, L. (2000). Computer experiences and computer attitudes of prospective teachers. *Atatürk Faculty of Education Journal of Educational Sciences, 12*, 135-166.

Dinçer, S. (2011). Investigation of computer learning levels and computer literacy of students in teacher training institutions during their education life. *Academic Informatics, 11*, 2-4.

Güler, H., & Sağlam, N., (2002). The Effects of Computer Assisted Instruction and Worksheets on Students' Achievement and Attitudes Towards Computer in Biology Teaching, *H. Ü. Journal of Faculty of Education, 23*, 117-123.

Kula, A, Avcı, Ü., & Haşlaman, T. (2020). Examining the views of disabled teachers on the integration of information and communication technologies. *Erzincan University Journal of Faculty of Education, 22*(3), 632-652.

Makris, S. (2018). *Introduction: "Outsider teachers" and the case for intersectionality*. in intersectionality narratives in the classroom (1-12). Palgrave Macmillan, Cham.

Nuhoğlu, H. (2008). Development of an attitude scale towards elementary science and technology course. *İlköğretim Online Journal, 7*(3), 627-639.

Oliver, M. (2017). *Defining impairment and disability: Issues at stake*. In Disability and equality law (pp. 3-18). Routledge.

Özabacı, N., & Olgun, A. (2011). A Study on Attitude Towards Science Course, Metacognitive Skills and Science Achievement in Computer Assisted Science Teaching. *Electronic Journal of Social Sciences, 10* (37), 93-107 .

Parker, E. C., & Draves, T. J. (2018). Tensions and perplexities within teacher education and P-12 schools for music teachers with visual impairments. *Arts Education Policy Review, 119*(1), 42-52.

Selwyn, N. (1997). Students' attitudes toward computers:Validation of a computer attitude scale for 16-19 education. *Computers and Education, 28* (1), 35-41.

Tal-Alon, N., & Shapira-Lishchinsky, O. (2019). Ethical dilemmas among teachers with disabilities: A multifaceted approach. *Teaching and Teacher Education, 86*, 102881.

Turhan, F., Aydoğdu, M., Şensoy, Ö., & Yıldırım, H. İ. (2008). Investigation of the relationship between 8th grade elementary school students' cognitive development levels, science achievement, attitudes towards science and gender variables. *Kastamonu Journal of Education, 16*(2), 439 -450.

Uun, S., (2000). *Computer assisted instruction in the world and in Turkey*, Ankara: Pegem Publishing.

Vogel, G., & Sharoni, V. (2011). 'My success as a teacher amazes me each and every day'perspectives of teachers with learning disabilities. *International Journal of Inclusive Education, 15*(5), 479-495.

Waldrop, J., & Stern, S. M. (2003). *Disability status: 2000/census brief*. Washington, DC: U.S. Department of Commerce, Economics and Statistics Administration. Retrieved from https://www.census.gov/prod/2003pubs/c2kbr-17. pdf

WHO (2012). World Health Organization, International classification of functioning, disability and health (ICF). Geneva: *World Health Organization*.

Yamak, B., İmamoğlu, O., & Çebi, M. (2016). Adölesanların fiziksel uygunluk seviyelerinin vücut imajı benlik tasarımı ve stres düzeyine etkisi. *Asos Journal, 1*(34), 191–201.

Yeşilyurt, S., & Gül, Ş. (2007). Computer Using Skills and Attitudes Toward Computers Scale (CSUASC): Validity and Reliability Study, *Journal of Ondokuz Mayıs University Faculty of Education, 24*, 79-88.

Yılmaz, M., Üredi, L., & Akbaşlı, S. (2015). Determining the computer proficiency levels of prospective primary school teachers and their perceptions towards the use of technology in education, *International Journal of Humanities and Education, 1*, 105-121

Yilmaz, Ö., & Elliöz, M. (2022). Özel Gereksinimli bireylerde spora katılım motivasyonunun incelenmesi. *Akademik Sosyal Araştırmalar Dergisi,* (130), 1–11.

CONTRIBUTION RATE	***EXPLANATION***	***CONTRIBUTORS***
Idea or Notion	*Form the research hypothesis or idea*	Murat AGAR
Design	*To design the method and research design.*	Mehmet CEBI
Literature Review	*Review the literature required for the study*	Ali Ihsan CEBI
Data Collecting and Processing	*Collecting, organizing and reporting data*	Murat AGAR
Discussion and Commentary	*Evaluation of the obtained finding*	Recep Nur UZUN
Statement of Support and Acknowledgment		
No contribution and/or support was received during the writing process of this study.		
Statement of Conflict		
Researchers do not have any personal or financial conflicts of interest with other people and institutions related to the research.		
Statement of Ethics Committee		
This research was conducted with the decision of Ondokuz Mayis University Ethics Committee numbered 2023/652		