

## **Level of Technological Competencies among Teachers of the Hearing Impaired (A Field Study on a Sample of Special Education Teachers in Mascara and Sidi Bel Abbes Provinces)**

Dr. Kourat Karima  
Karima.kourat@univ-saida.dz  
&  
Phd Student Azzaoui kadda  
kadda.azzaoui@univ-saida.dz  
&  
Dr. Nebbar Rekia  
rekia.nebbar@univ-saida.dz

Laboratory TATWIR for Research in Social and Human Sciences (Algeria)

**Abstract:** The current study aims to identify the level of educational technological competencies possessed by teachers of hearing-impaired students and to explore the differences in competency levels based on the variables of teacher category, professional seniority, and gender. To achieve this, the descriptive method was employed. The study sample consisted of 49 teachers and instructors of specialized education in schools for hearing-impaired children in Mascara and Sidi Bel Abbes provinces. A questionnaire comprising 19 items was administered. The results revealed that teachers of hearing-impaired students possess educational technological competencies at a moderate level. Additionally, no statistically significant differences were found in competency levels based on teacher category or professional seniority. However, statistically significant differences were observed in favor of female teachers concerning the gender variable.

**Keywords:** Technological Competencies, Educational Competencies, Hearing Impairment

### **Niveau de Maîtrise des Compétences Technologiques Pédagogiques chez les Enseignants d'Élèves Déficients Auditifs**

**Resumé :** L'objectif de cette étude est d'identifier le niveau de compétences technologiques éducatives des enseignants d'élèves déficients auditifs et d'explorer les différences de niveaux de compétences en fonction des variables de catégorie d'enseignant, d'ancienneté professionnelle et de sexe. Pour ce faire, la méthode descriptive a été utilisée. L'échantillon de l'étude était composé de 49 enseignants et instructeurs de l'éducation spécialisée dans les écoles pour enfants déficients auditifs des provinces de Mascara et de Sidi Bel Abbes. Un questionnaire de 19 items a été administré. Les résultats ont révélé que les enseignants d'élèves déficients auditifs possèdent des compétences technologiques éducatives à un niveau modéré. De plus, aucune différence statistiquement significative n'a été trouvée dans les niveaux de compétence en fonction de la catégorie d'enseignant ou de l'ancienneté professionnelle. Cependant, des différences statistiquement significatives ont été observées en faveur des enseignantes féminines concernant la variable du sexe.

**Mots-clés:** compétences technologiques, compétences éducatives, déficience auditive

## **Introduction:**

The methods and elements of the educational process have increasingly relied on modern technology and advanced tools due to their significant positive impact on improving and enhancing the quality of education. Hani (2014) pointed out that among the advantages of using technology in education is its ability to increase learners' motivation, provide immediate feedback, and add an element of enjoyment to various stages of learning. Similarly, Earle (2002) found a strong relationship between teachers' use of technology and the improvement in students' academic achievement, as well as increased motivation in the learning process.

This underscores the importance of hearing-impaired teachers possessing knowledge of modern educational technologies and having sufficient technological competencies to effectively utilize and implement these tools. Salem (2004) emphasized that teachers should master a set of skills, such as using devices and producing educational tools and programs. Moreover, Ghazo and Alimat (2017) highlighted that the emergence of new technological advancements in education necessitates the preparation of qualified teachers capable of effectively employing these innovations in educational settings to achieve desired objectives. Additionally, Quraiti (2011) recommended equipping classrooms with essential teaching aids, classifying them into groups, and organizing them in a manner that facilitates easy access for use when needed. Based on the importance of using technological tools in the educational field in general, and given their significant benefits in teaching individuals with special needs, this study aims to identify the level of educational technological competencies possessed by teachers of hearing-impaired students in light of certain variables.

## **Study Problematic**

Scientific and technological advancements have led to a transformation in the roles of teachers. No longer confined to merely transmitting knowledge and delivering lessons, teachers today are expected to function as planners, designers, implementers, and evaluators of the educational process, as highlighted by Al-Abed (1985). According to him, the teacher's role, in light of modern technological developments, lies in the processes of learning, teaching, implementation, and evaluation. Similarly, Al-Toudari (2005) emphasized that to effectively integrate computers into education, it is essential to have teachers equipped with the necessary skills, knowledge, and technical capabilities to utilize computers and their various applications. Teachers need to be prepared to meet the demands of computer-based education by being adequately trained in computer and internet usage. This preparation is most effective when provided during teacher training and further enhanced through in-service training programs and workshops.

Possessing educational technological competencies has become imperative for teachers of hearing-impaired students to enhance their abilities and enrich their expertise, enabling them to fulfill their responsibilities effectively. Hearing-impaired students, like others with special needs, require specialized and intensive educational care to achieve established goals. Salem (2004) pointed out that some researchers have categorized the technological competencies required for special education teachers into several domains. These include the fundamentals of educational technology, an understanding of the role of teaching aids in learning and teaching processes, and recognizing the importance of educational technology in the teaching-learning process. Based on this perspective, the study attempts to answer the following questions:

What is the level of educational technological competencies possessed by teachers of hearing-impaired students?

Does the level of educational technological competencies among teachers of hearing-impaired students differ based on teacher category (specialized education teacher, specialized education professor)?

Does the level of educational technological competencies among teachers of hearing-impaired students differ based on gender?

Does the level of educational technological competencies among teachers of hearing-impaired students differ based on professional seniority?

### **Hypotheses of the Study:**

There are no statistically significant differences in the degree of technological teaching competencies possessed by teachers of hearing disabilities based on the variable of teacher category. There are no statistically significant differences in the degree of technological teaching competencies possessed by teachers of hearing disabilities based on the gender variable. There are no statistically significant differences in the degree of technological teaching competencies possessed by teachers of hearing disabilities based on the variable of professional seniority.

### **Objectives of the Study:** The study aims to:

Identify the degree to which teachers of hearing disabilities possess technological teaching competencies.

Identify the differences in the degree of technological teaching competencies possessed by teachers of hearing disabilities according to the variables of teacher category, gender, and professional seniority.

### **Importance of the Study:** The importance of the study lies in:

Identifying the technological teaching competency needs of teachers of hearing disabilities to perform their tasks.

Understanding the current situation of technological teaching competencies possessed by teachers of hearing disabilities.

Creating a list of technological teaching competencies for teachers of hearing disabilities.

Assessing the availability of computer skills in education among teachers of hearing disabilities.

Focusing on the importance of using technological teaching competencies to teach students with hearing disabilities.

Utilizing the results of this research to conduct similar studies in other fields.

### **Operational Definition of Study Terms:**

### **Technological Teaching Competencies:**

(Al-Sharif, 2005) defines technological teaching competencies as the knowledge, skills, and attitudes related to the field of educational technology that are necessary for the human element to reach a level of proficiency in performing their job. Operationally, it is defined as the set of skills and abilities that teachers must master in the field of educational technology, using various technological tools.

### **Teacher of Hearing Disabilities:**

(Malki & Al-Qahtani, 2020) refer to teachers of hearing disabilities as specialists and trained professionals who possess cognitive, psychological, and practical skills, and have the ability and knowledge in strategies for teaching and developing listening and comprehension skills. They also have the capacity to use assistive technology for deaf and hard-of-hearing students.

Operationally, they are defined as teachers who have received special training and are qualified to teach and care for individuals with hearing disabilities in centers and institutions for teaching deaf children.

### **Previous Studies:**

A study by "Bakhidlaq" (2010) aimed to determine the degree to which biology teachers in secondary schools possess the necessary technological teaching competencies for presenting and producing multimedia in the city of Mecca. The study was applied to a sample of 117 biology teachers in secondary schools. The researcher followed the descriptive method to achieve the study's objectives and developed a questionnaire as a tool for the study. The results showed that the teachers had a high degree of technological teaching competencies for presenting multimedia, and there were no statistically significant differences in the degree of competencies related to teaching experience. While there are statistically significant differences in the level of teachers' production proficiency, these differences are attributed to the variable of years of experience in favor of less experienced teachers.

The study by "Al-Najjar" (2012) aimed to investigate the extent to which technological teaching competencies are available among mathematics teachers in the basic education stage in Jordan, as well as their application of these competencies from their perspective. To achieve this aim, the researcher employed the descriptive method and used a questionnaire consisting of 17 items. The study sample included 680 male and female teachers. The results indicated that technological teaching competencies were highly available among mathematics teachers. The findings also revealed differences in the availability and application of technological teaching competencies attributed to variables such as stage, gender, and qualifications. Additionally, statistically significant differences were found related to the experience variable, favoring teachers with 10 years or more of experience.

The study by "Al-Fudhli and Aba Hussein" (2017) aimed to identify the degree to which teachers of students with learning difficulties in the Riyadh region possess the necessary technological teaching competencies and their application of these competencies. The descriptive method was used, and the study was conducted on a sample of 60 teachers of students with learning difficulties in the Riyadh region during the second semester of the 2016/2017 academic year. The results concluded that teachers of students with learning

difficulties in the Riyadh region possess technological teaching competencies to a high degree and also practice them to a high degree.

The study by "Al-Samadi" (2019) sought to examine the degree to which secondary school mathematics teachers in Ajloun Governorate possess technological competencies from their perspective. To achieve the study's objective, the researcher used the descriptive-analytical method and a questionnaire consisting of 17 items. The study was conducted on a sample of 274 male and female teachers. The results showed that the teachers possessed technological competencies to a high degree, with no statistically significant differences in the degree of competency possession attributed to the gender variable.

The study by "Al-Miqdami" (2018) sought to explore the determinants of the reality of deaf and hard-of-hearing teachers in utilizing educational technologies. It also aimed to identify the obstacles limiting the use of educational technologies by teachers of deaf and hard-of-hearing students in teaching these learners. The researcher adopted the descriptive-analytical method and used a questionnaire consisting of 36 items. The study sample included 116 teachers of deaf and hard-of-hearing students. The results revealed that teachers' knowledge of educational technologies was of a moderate level. No statistically significant differences were found in the reality of using educational technologies by teachers of deaf and hard-of-hearing students based on the educational setting variable (school, institute, or integration program). However, statistically significant differences were identified in the use of assistive technologies based on professional experience, favoring teachers with more than 10 years of experience.

The study by "Bani Hamad" (2019) sought to determine the extent to which special education teachers possess educational technological competencies in the southern region of Saudi Arabia and to assess their teaching performance. The sample consisted of 92 teachers. To achieve the study's objectives, the researcher adopted the descriptive method. The results indicated that the degree of possession of educational technological competencies by special education teachers was high, with no statistically significant differences in the level of possession of these competencies or in their teaching performance based on gender or teaching experience variables.

The study by "Belqrawa" (2020) aimed to examine the availability of pedagogical technological competencies among physical education and sports teachers and their level of use during the stages of a lesson (planning, execution, and evaluation). The study involved a sample of 359 secondary school physical education and sports teachers in Algeria. To meet its objectives, the researcher employed the descriptive method using a questionnaire as the primary tool. The results showed a high level of use and application of pedagogical technological competencies among the teachers, with no statistically significant differences related to the number of years of work experience.

The study by "Al-Otaibi and Al-Qahtani" (2020) focused on identifying the level of application of assistive technological competencies by teachers of students with intellectual disabilities in light of demographic variables (experience level, academic qualifications, and training in the use of assistive technology). The descriptive-analytical method was used, and a 39-item questionnaire covering four domains (usage, design, production, and evaluation) was developed. The study included a sample of 121 teachers. The results showed that the degree of application of technological competencies and their domains among teachers of students with intellectual disabilities ranged between high and moderate. Experience level, academic

qualifications, and training in the field of intellectual disabilities did not significantly impact the application of technological competencies in teaching students with intellectual disabilities.

### **Commentary on the Studies:**

After reviewing the previous studies, the researcher found several significant results, the most prominent of which are:

All studies agreed that the degree of possession of educational technological competencies by the study samples was high, except for the study by "Al-Otaibi and Al-Qahtani" (2020), where the possession of educational technological competencies by their sample was moderate.

The study by "Al-Najjar" (2012) indicated statistically significant differences in the degree of possession of educational technological competencies attributed to the variable of gender. However, studies by "Al-Samadi" (2019), "Bakhadlaq" (2010), and "Bani Hamad" (2019) indicated no statistically significant differences in the degree of possession of educational technological competencies based on the gender variable.

Studies by "Al-Najjar" (2012) and "Bakhadlaq" (2010) showed statistically significant differences in the degree of possession of educational technological competencies attributed to the variable of years of work experience, whereas studies by "Bilqarawe" (2020) and "Bani Hamad" (2019) agreed that there were no statistically significant differences based on the variable of years of experience.

The studies by "Al-Otaibi, Al-Qahtani" (2020), "Al-Muqaddami" (2018), and "Bani Hamad" (2019) focused on a sample of teachers for students with special needs, while the other studies included samples of teachers from regular schools. The previous studies show diversity in terms of the nature of their populations and samples. Some studies focused on the use of educational technological competencies, while others addressed the degree of possession and practice of these competencies. One study (Al-Muqaddami, 2018) also addressed the barriers to using educational technological competencies.

### **Second: Field Study**

**Study Methodology:** The descriptive methodology was used as it is suitable for the nature of the topic.

**Study Population and Sample:** The study population consisted of all teachers and professors in schools for students with hearing impairments in the Wilaya of Mascara and Sidi Bel Abbès during the second semester of the 2023/2024 academic year. Due to the small and limited size of the study population, the researchers selected all members of the population as the study sample, which amounted to (49) teachers and professors, as shown in Table No. (01).

**Table No. (01): Distribution of the Study Sample by Its Variables**

Variable	Category	Frequency	Percentage
Gender	Male	16	32.7%
	Specialized Education Teacher	33	67.3%
	Female		
Teacher Type		23	46.9%
	Specialized Education Professor	26	53.1%
Professional Seniority	Less than 7 years	28	57.1%
	More than 7 years	21	42.9%

### Instrument of the Study:

To achieve the study's objectives, a questionnaire was developed based on theoretical research and previous studies related to technological competencies in education, including the studies of "Amour" (2014), "Bani Ahmad" (2019), and "Al-Otaibi and Al-Qahthani" (2020). The initial version of the instrument consisted of 22 items to which participants respond using a five-point Likert scale: Very High (5 points), High (4 points), Medium (3 points), Low (2 points), Very Low (1 point).

### Psychometric Properties of the Instrument:

#### 1. Validity :

A. To verify the validity of the instrument, it was reviewed in its initial form by several experts from Saida University and teachers of hearing-impaired children at the School for Hearing Impaired Children in Saida and Sidi Bel Abbes. They assessed the language clarity of the items, their clarity, and their ability to measure the intended construct. Based on their feedback and suggestions, some items of the questionnaire were modified.

B. Internal consistency was also calculated to assess the relationship between each item and the overall scale, as shown in Table 2.

**Table No. (02): Correlation Coefficients Between the Item and the Total Score of the Scale**

Item Number	Correlation Coefficient	Judgment	Item Number	Correlation Coefficient	Judgment
01	<b>0.55</b>	significant	12	<b>0.45</b>	significant
02	<b>0.43</b>	significant	13	<b>0.52</b>	significant

03	<b>0.51</b>	significant	14	<b>0.71</b>	significant
04	<b>0.58</b>	significant	15	<b>0.55</b>	significant
05	<b>0.20</b>	not significant	16	<b>0.73</b>	significant
06	<b>0.66</b>	significant	17	<b>0.75</b>	significant
07	<b>0.56</b>	significant	18	<b>0.65</b>	significant
08	<b>0.19</b>	not significant	19	<b>0.56</b>	significant
09	<b>0.63</b>	significant	20	<b>0.15</b>	not significant
10	<b>0.44</b>	significant	21	<b>0.68</b>	significant
11	<b>0.63</b>	significant	22	<b>0.35</b>	significant

We can observe from Table (02) that all the correlation coefficients were of acceptable and statistically significant degrees in the scale, except for items (05, 08, 20), which had weak correlation coefficients (0.20, 0.19, 0.15) and were not significant. Therefore, they were excluded.

## 2. Reliability Calculation:

The researchers calculated the reliability of the tool using internal consistency according to Cronbach's alpha formula, as shown in Table (03).

**Table (02) Cronbach's Alpha Reliability Coefficient**

Number of Items	Cronbach's Alpha
22	0.874

It is clear from Table (03) that the overall reliability coefficient of the tool is (0.87), and with these results, these values are considered high and acceptable for the purposes of the study.

Statistical Processing: To answer the research questions, the researcher used the following statistical treatments:

- Arithmetic means
- Standard deviations
- Percentages
- T-test

## Determining the Class Length:

The questionnaire was divided into categories in order to reach the study results using the arithmetic mean. The data was coded and entered into the computer. To determine the lower and upper bounds of the five-point scale, the range was calculated: Maximum value - Minimum value ( $5-1 = 4$ ). Then, this result was divided by the number of levels to be used, which is three (Low, Medium, High).  $4/3 = 1.33$ . This value was then added to the lowest value in the scale (1) to determine the upper limit for this cell. Thus, the length of the cells is calculated as follows:

(Upper limit - Lower limit) / Number of levels.

Table (03) shows the judgment criteria for the average responses of the study sample members to the questionnaire items

The mean score	Grade
1-2.33	Low
2.34-3.67	Meduim
5-3.68	High

The table (03) outlines the criteria for evaluating the averages of the study sample members. Scores between 1 and 2.33 are considered low, 2.34 to 3.67 are medium, and 3.68 to 5 are high.

#### Presentation and Discussion of Study Results:

##### Presentation and Discussion of the First Question:

What is the level of educational technology competencies among teachers of students with hearing impairments? To answer this question, the means and standard deviations of the level of educational technology competencies among special education teachers were calculated, along with those for each item in the study instrument, as shown in Table (04).

**Table (04):Means and standard deviations for the level of educational technology competencies, ranked in descending order.**

Number	Item Rank	Item	Mean	Std. Dev	Level
19	01	I employ smart device applications during teaching	3.83	1.10	High
01	02	possess basic computer skills.	3.55	0.91	Medium
06	03	I am capable of using various web search engines.	3.46	1.15	Medium
15	04	I can operate and use computer peripherals (printer, scanner).	3.44	1.13	Medium
08	05	I am capable of using online educational platforms.	3.38	1.01	Medium
02	06	I rely on a computer for lesson preparation.	3.32	1.08	Medium
09	07	I can set up computers and their accessories.	3.30	1.02	Medium
10	08	I use computers when preparing various assessments.	3.18	0.85	Medium
07	09	I can create educational videos using computer software.	3.16	1.17	Medium
12	10	I am capable of installing various computer programs.	3.10	1.06	Medium
05	11	I can produce images and visual effects using a computer.	3.08	1.05	Medium
17	12	I can produce video clips using sign language.	3.00	1.09	Medium
14	13	I am proficient in using various educational software on a computer.	2.97	1.08	Medium

18	14	I search for modern teaching technologies for students with hearing impairments.	2.93	1.23	Medium
16	15	I can develop a programmed instruction unit.	2.91	0.95	Medium
03	16	I design classroom activities for students with hearing impairments using a computer.	2.83	1.04	Medium
11	17	I can convert study materials into digital resources using technology.	2.63	1.16	Medium
13	18	I use illustrated e-books during teaching.	2.24	1.07	Low
04	19	I use PowerPoint during lesson presentations.	2.06	1.10	Low
Overall			3.07	0.63	Medium

It is evident from Table (04) that the means of the level of educational technology competencies ranged between 3.83 and 2.06, with standard deviations from 0.85 to 1.23. The overall mean for this dimension was 3.07, with a standard deviation of 1.10. Referring to the established criteria for determining competency levels, most items in this dimension were rated as medium, except for item (19), which was rated as high, and items (04 and 13), which were rated as low. The overall score for the dimension was medium.

The medium level of educational technology competency among teachers of students with hearing impairments can be attributed to the increasing need to use technology in teaching, such as computers, their peripherals, and smart devices. Item (19) ranked first, indicating that teachers frequently use smart device applications during teaching. This is likely because these devices are widely available among teachers, easy to use, and compatible with computers. Additionally, it has become more convenient to search for and utilize various applications via smartphones in teaching.

Items (01, 06, 15, 08) showed that teachers possess basic computer skills and rely heavily on computers for lesson preparation. This indicates their awareness of the importance of acquiring computer-related competencies and the role these tools play in enhancing the educational process. They also find that using computers aids in preparing, planning, and delivering lessons. Furthermore, teachers demonstrated proficiency in utilizing online educational platforms, which offer up-to-date knowledge that can benefit them in their teaching roles. On the other hand, items (11, 13, 14, 16, 17) ranked lowest. These items are related to general instructional design, such as developing programmed instructional units and producing video clips. The researcher attributes this to the fact that these competencies require specialized training and significant time and effort to learn and master, potentially adding to the teacher's workload.

The findings of this study align with those of the study conducted by Al-Otaibi and Al-Qahtani (2020), which indicated that high school teachers possess educational technology competencies at a medium level. This was attributed to the need for teacher training in the field of technological competencies, as these skills are becoming increasingly essential in the teaching profession. However, the results of this study differ from those of Al-Samadi (2019), Al-Najjar (2012), and Al-Fadli and Aba Hassan (2017).

### **Presentation and Discussion of the Second Hypothesis:**

"There are no statistically significant differences in the level of educational technology competencies among teachers of students with hearing impairments based on the teacher's classification (Specialized Education Teacher, Specialized Education Instructor)."

To verify the validity of this hypothesis, the differences were calculated using an independent samples t-test, and the results are presented in the following table:

**Table (05): Results of Differences Based on the Teacher Classification Variable**

Teacher Classification	Sample Size	Mean	Std. Deviation	Calculated t-value	Degrees of Freedom	Significance Level (p-value)	Decision
Specialized Education Teacher	23	3.11	0.64	0.43	47	0.669	Not Significant
Specialized Education Instructor	26	3.04	0.63				

(0.05) \*

We observe from Table No. (05) that the mean value of the category of specialized education teacher is (3.11) with a standard deviation of (0.64), which is close to the mean value of the category of specialized education professor, which is (3.04) with a standard deviation of (0.63). This indicates that the level of possession of educational technological competencies for both categories is similar. This is further confirmed by the calculated "t" value, which is (0.43) and not statistically significant at degrees of freedom (47) and an error level of (0.05), with a significance level of (0.66). This means there are no statistically significant differences in the level of possession of educational technological competencies among teachers of students with hearing impairments based on the variable of teacher category.

This result may be attributed to the fact that both teachers and professors across all categories have received similar training, particularly in the use of teaching aids designed to enhance, improve, and simplify the educational process. This has led to their awareness of the importance of possessing such competencies. Additionally, the widespread availability of technology in their professional environment has compelled them to use it due to its features, which help learners comprehend the educational material and create an engaging learning environment. This is especially relevant for students with hearing impairments, who often need to utilize other senses, such as touch and sight, which these technologies can provide.

The researchers attribute these findings to the fact that teachers across all categories recognize the importance of using technological tools in teaching and the significance of possessing educational technological competencies.

This study aligns with the findings of Al-Muqaddami (2018), which aimed to identify the determinants of the reality of teachers of the deaf and hard of hearing in using educational technologies. That study similarly concluded that there are no statistically significant differences in the level of knowledge and use of educational technologies based on the educational choice variable (school, institute).

### Presentation and Discussion of the Third Hypothesis:

Hypothesis: There are no statistically significant differences in the level of possession of educational technological competencies among teachers of students with hearing impairments based on gender. To verify this hypothesis, the differences were calculated using the independent samples "t-test." The results are presented in the following table:

**Table No. (06): Results of differences based on the gender variable.**

Gender	Sample Size	Mean	Standard Deviation	Calculated "t" Value	Degrees of Freedom	Significance Level	Decision
Male	16	2.78	0.70	2.13 -	47	0.02	Significant
Female	33	3.21	0.55				

(0.05) \*

From Table No. (06), we observe that the mean value for males is (2.78) with a standard deviation of (0.70), which differs from the mean value for females, which is (3.21) with a standard deviation of (0.55). This indicates that the level of technological educational competencies between genders is not similar.

This is further confirmed by the calculated t-value of (-2.13), which is significant at a degree of freedom (47) and an error level of (0.05) with a significance level of (0.025). This means there are statistically significant differences in the level of technological educational competencies among teachers of students with hearing impairments, based on gender, in favor of females.

This result can be explained by the fact that the number of female teachers is significantly higher than male teachers, as well as females' greater interest in the field of education and their dedication to providing their best by utilizing modern technologies and techniques in teaching. Additionally, they actively seek to develop their skills to acquire digital and technological teaching competencies, making it easier for them to perform their duties with ease, manage classrooms efficiently, and achieve better results.

The findings of this study, indicating the existence of statistically significant differences in technological educational competencies among teachers of students with hearing impairments, are consistent with the study by Al-Najjar (2012). However, they differ from the studies of Al-Sumadi (2019) and Bani Hammad (2019).

### Presentation and Discussion of the Fourth Hypothesis

There are no statistically significant differences in the level of technological educational competencies among teachers of students with hearing impairments based on the variable of professional seniority. To test the validity of this hypothesis, the differences were calculated using the t-test for two independent samples. The results are shown in the following table:

**Table No. (07) Results of the Differences Based on the Variable of Professional Seniority**

Professional Seniority	Sample Size	Mean	Standard Deviation	Calculated t-Value	Degrees of Freedom	Significance Level	Decision
Less than 7 years	28	3.06	0.65	0.14 -	47	0.885	Not-significant
More than 7 years	21	3.09	0.61				

(0.05) \*

From Table No. (07), it is observed that the mean score for teachers with less than 7 years of seniority is (3.06) with a standard deviation of (0.65), which is close to the mean score for teachers with more than 7 years of seniority at (3.09) with a standard deviation of (0.61). This indicates that the level of technological educational competencies is similar across both groups. This is further confirmed by the calculated t-value of (-0.14), which is not statistically significant at 47 degrees of freedom and an error level of (0.05), with a significance level of (0.88). This implies that there are no statistically significant differences in the technological educational competencies of teachers of students with hearing impairments based on the variable of professional seniority.

The result can be attributed to the fact that teachers, regardless of their years of experience, strive to incorporate modern technologies in their teaching practices. This is a natural outcome of the rapid technological advancements in various fields, especially education. Additionally, these technologies are readily available in most institutions, requiring teachers to develop their skills, particularly in using computers, artificial intelligence applications, educational software, and exploring online educational platforms and networks.

This study's findings align with those of Belqrawa (2010), Bani Hammad (2019), and Al-Otaibi & Al-Qahtani (2020), which also found no statistically significant differences in technological competencies based on professional seniority. However, the results differ from those of Al-Najjar (2012), Bakhdelq (2010), and Al-Maqdami (2018).

## Recommendations

Based on the study's findings, the following recommendations are proposed:

1. Encourage teachers to enhance their skills in utilizing modern technologies in education.
2. Organize training workshops for teachers on the effective use of technology in teaching.
3. Motivate teachers to learn English, as most technological tools and resources are in English.
4. Explore and adopt successful local and international practices in using technology for teaching, particularly for special needs education.
5. Address barriers that may hinder the use of technological innovations, such as ensuring high-speed internet access, providing computers, interactive whiteboards, and smart devices in classrooms.
6. Analyze the training needs of special education teachers in mastering modern technology and design training programs accordingly.
7. Encourage teachers to integrate technological tools when planning and delivering lessons, ensuring they select tools suited to the type and severity of students' disabilities.

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