SCIENTIFIC CULTURE

www.sci-cult.com

SCIENTIFIC CULTURE, Vol. 12, No. 1.1, (2026), pp. 699-711
Open Access. Online & Print

DOI: 10.5281/zenodo.11425157

THE LEVEL OF TEACHERS' INTEGRATION OF EDUCATIONAL TECHNOLOGY IN INSTRUCTING STUDENTS WITH LEARNING DISABILITIES

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Received: 11/11/2025
Accepted: 18/12/2025

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ABSTRACT

In the field of special education, understanding the implementation of technology is critical to enhancing student outcomes. This study employed a descriptive analytical survey design with a sample of 120 elementary teachers of students with learning disabilities (70 male, 50 female) to examine the extent to which they integrate educational technology in their instruction and to explore potential differences based on gender, academic stage, and participation in training courses. Data were collected using a structured questionnaire. The findings indicated a high level of educational technology utilization among the teachers. No statistically significant differences were observed based on gender or academic stage. However, teachers who had participated in training courses on educational technologies demonstrated significantly higher levels of integration. These findings highlight the critical role of professional development in fostering inclusive education and advancing digital transformation in special education contexts.

KEYWORDS: Educational Technology, Learning Disabilities, Special Education Teachers, Technology Integration.

1. INTRODUCTION

The rapid advancement of science and technology, particularly in information systems and computer technologies, is transforming learning all over the world beyond the normal limits of space and time (Ouyang & Jiao, 2021). These technologies have created new learning demands fueled by globalization, calling for new models of instruction and technology to cater to the multisensory learning demands of various learners, including learning-disabled learners (Hakami et al., 2023). Teachers are the driving agents of this change, and they are the primary agents of change to implement educational innovations and improve the student achievements (Al-Ghamdi & Al-Farani, 2020).

Recent studies recognize growing adoption of combining interactive technological elements into courses in order to enhance student engagement and position students for success in contemporary challenges (Chiu & Chai, 2020). Effective combining entails comprehensive planning of the curriculum as well as targeted professional development in order to equip educators to make effective use of such resources in their instructional practice (Smaili, 2023).

Educational technology has proven of invaluable benefit to students with disabilities in learning by providing timely instructional support, facilitating differentiated learning, developing creativity, and stimulating self-regulated learning. Educational technology also facilitates the solution of teaching problems by educators and improving the quality of educational outcomes.

However, effective utilization of the learning technologies is more than having access to devices and connection; it necessitates knowledge, positive attitudes, and staff development to maximize their utility in instruction. This aligns with Saudi Vision 2030, which demands digital transformation in education (Al-Sudairi & Al-Tantawi, 2024).

Along this line, the present research aims to examine how far teaching instructors of students with learning disabilities utilize educational technologies in classroom teaching. Based on the exploration of actual classroom practices, the present study endeavours to facilitate educational quality improvement as well as provide a potential reference model for comparative educational environments.

1.1. Problem Statement

The integration of education technologies into curriculums has also been increasing within schools across Saudi Arabia. Recent surveys indicate that over 50% of schools nationwide have integrated electronic educational tools into teaching practices (David, 2019). Classrooms in the future will probably become fully technology-enhanced rooms to present individualized interactive learning experiences addressing specific student needs. Students can benefit from self-instructional learning, while instructors benefit from better instructional quality and better classroom management (Turki, 2019).

Educational technologies offer tremendous support in overcoming challenges involved in traditional classroom practices such as lesson planning, documents organization, and preparation of instructional materials, apart from facilitating communication with students. Evidence indicates that teachers spend approximately 31% of their time on administrative tasks and grading and the remaining on direct student interaction. Use of educational technologies can rectify such limitations, allowing instructors to spend more time on teaching and learning by the students (Al-Johani, 2020). Furthermore, they provide anytime access to information, improve research skills, enhance communication among the teachers and learners, and assist learners with disabilities in reading, writing, and numeracy (Al-Ghamdi, Al-Ghamdi, & Al-Farani, 2023).

Despite these strengths, learning disability students and their teachers still face barriers that affect education quality (Al-Shahri, 2022). Studies recognize the necessity of comprehensive training in technology integration at all levels of education to ensure effective instructional use and collaborative learning (Abu-Khail, 2021; Hamed & Al-Adawi, 2023; Huang, 2021). Moreover, research emphasizes the need to have specific professional development workshops to equip teachers with skills to deal with the specific needs of students having learning disabilities (Smaili, 2023; Mujahid, 2020; Al-Shahri, 2023; Mouti & Rehawi, 2023; Sharma et al., 2023; Papastratis et al., 2021).

Accordingly, the present study seeks to investigate the extent to which children's learning disability teachers employ instructional technologies in teaching. The findings are meant to guide the quality of classroom practice and enhance the effect of utilizing technology as a model for similar schools.

1.2. Research Questions

1. To what degree do teachers embed educational technologies in supporting students with learning disabilities in their education, according to their perceptions?
2. What challenges are faced by teachers in embedding educational technologies for

students with learning disabilities?
3. Do statistically significant differences exist in the responses of teachers towards the embedding of educational technologies by gender, level of education, or taking professional development courses?

1.3. Study Objectives

The study aims to

1. Explain teachers' attitudes towards the benefits of using educational technologies in teaching learners with learning disabilities.
2. Identify the major challenges that limit teachers from using educational technologies in teaching learners with learning disabilities.
3. Investigate differences in teachers' attitudes towards the benefits of incorporating educational technology by gender, education level, and participation in training courses.

1.4. Significance of the Study

1.4.1. Theoretical Significance

1. The study answers a significant and timely question: the use of education technologies to facilitate learning of students with learning disabilities.
2. It is among the rare Arab studies to cover both the use of and the problems of education technologies in special education.
3. The findings of the study should enrich the Arabic-language academic literature and provide a valuable contribution to learning disabilities research.
4. The research also gives a conceptual framework on the use of educational technologies in the enhancement of instruction processes from the teachers' perspective towards students with learning disabilities.

1.4.2. Practical Significance

The study's findings are expected to be beneficial to

1. The Ministry of Education, through information for strategic interventions in special education, capacity building programs, and the improvement of teachers' skills to employ educational technologies, enhancing learning outcomes and addressing individual differences among students.
2. Curriculum planners, educational supervisors, and teachers of students with learning disabilities, through providing insights on enhancing teaching practice through successful integration of technology.
3. Researchers in the field of learning disabilities, by offering data and information that can inform future research at all stages of education (elementary, middle, and secondary), in regards to Saudi Arabia's Vision 2030.

1.5. Study Limits

- Subjective Limit: The study is limited to examining the strengths and challenges of using educational technologies in teaching students with learning disabilities as perceived by their instructors.
- Temporal Limit: The study was conducted during the 2025 academic year.
- Spatial Limit: The study was conducted in learning disability programs within general education in elementary schools in Saudi Arabia's Al-Ahsa Governorate.
- Human Limit: Sample used in study comprised only those elementary school teachers of learners with learning disabilities who were enrolled in general education-related programs.

1.6. Key Terms

Learning Disabilities Defined by Al-Amri (2014, p. 32) as disorders of one or more basic psychological processes used to understand or use spoken or written language that manifest themselves as difficulties with listening, thinking, speaking, reading, writing, or arithmetic that are not caused by intellectual, sensory, or other disabilities. **Operational definition for purposes of this study** Shortcomings in discrete cognitive or psychological operations of students formally or informally assessed as having learning disabilities, limiting their ability to learn concepts and skills via normal instructional strategies. These students receive general education courses in general education classrooms under specially designed services based on their personal needs and capacities.

Educational Technologies It is characterized by Al-Ghamdi and Al-Farani (2020, p. 45) as "a collection of tools, devices, and electronic software systematically utilized to support and enhance the productivity of the educational process." **Operational definition of the current study** All electronic materials and equipment (e.g., computers, software, learning applications, and electronic networks) used by special education teachers to facilitate teaching practices in class and student learning.

2. LITERATURE REVIEW

The importance of instructional technologies to support instruction and learning has been adequately expounded. These technologies enhance key teaching content, establish instructors' teaching expertise, provide teachers with enhanced appraisal tools, offer guides to learning resources, and allow instructors to commit more time to assisting learners either in small groups or one-on-one. Educational technologies also serve as an appropriate replacement when schools lack specialist teaching personnel, covering pedagogical gaps (Saadallah & Shatouh, 2019).

Maghrawi (2024) also emphasizes that education technologies enable customized learning experiences grounded in the potential, skills, and actual performance of individual learners. The technology supports differentiated instruction, promotes critical and creative thinking, and provides immediate, precise feedback on student performance, thereby promoting learning outcomes and attainment of instructional objectives.

Significance of Educational Technologies in Teaching The virtuality of learning technologies imposes functionalities not found in conventional classroom environments. The technologies facilitate the exploration of new learning patterns and accelerate the development of new teaching paradigms (Al-Ghamdi & Al-Farani, 2020). **The key benefits are**

- Focus on systematic steps of learning and teaching design responsive to teacher and learner needs.
- Positioning the educator as a mentor and learning professional, to provide more effective guidance and mentoring.
- Offering learning difficulty students, e.g., reading, writing, and attention difficulties, with customized activities, performance evaluation, and facilitating accelerated learning as well as reducing teacher workload (Mohammed, 2023).

2.1. Opportunities for Teachers from Educational Technologies

Educational technologies have become increasingly common, with initial uses dating back to the 1960s and 1970s when computers began offering instructional content customized to learner characteristics. These early attempts set the stage for today's advanced learning platforms, which are now widely implemented in classrooms (Al-Amri, 2024). With continued technological advancement, education technologies will likely play a vital role in enhancing teaching quality, supporting innovative learning, supporting educational decision-making, and solving instructional issues more effectively (Al-Suwaidi et al., 2023; Barzanji, 2024).

Use of education technologies that can support teaching Virtual Reality (VR): VR provides interactive, computer-generated environments that immerse students in multisensory learning experiences, such as virtual field trips or lab experiments, to support exploration, independent learning, and understanding. VR also enables students with special needs to be assisted through the provision of interesting, interactive, and independent learning environments.

Smart Chatbots These AI-powered computer programs simulate human conversation, answering learners in text, voice, or both. They give immediate help, clarify difficult concepts, provide feedback, and support learners, enhancing motivation and engagement without the presence of humans.

Expert Systems They mimic human experience in a particular domain, using knowledge-based rules of applying to provide solutions and recommendations. Expert systems assist instructors in selecting instructional methods appropriate for students with learning disabilities and design individualized learning plans, improving education quality.

Implementation of Educational Technologies Educational technologies have brought about a paradigm shift in educating children with learning disabilities. They enhance the quality of service, remove barriers in the classroom, and facilitate skill acquisition, including

- Assisting in the effective completion of assignments.
- Helping teachers in executing individualized education plans.
- Correcting reading, understanding, writing, and mathematics difficulties.
- Correcting visual-motor coordination and cognitive abilities.
- Enhance organizational ability and spatial perception, facilitating adjustment in the classroom (Yahyaoui, 2015).

2.2. Applications of Education Technologies

Implementation of education technologies for students with learning disabilities has been documented as early as 1993 (Bander, 2011; Tashma, 2022). The International Conference on Education and Technology held in Beijing in 2019 highlighted that technology applications raise interest and motivation for academics. Tools have been employed to remediate reading and writing deficiency, and as

tools for assessment purposes for student needs diagnosis (Bander, 2011). Federal special education law since 1997 has been emphasizing the incorporation of technology in individualized education programs, including

- New instructional technologies for reading, writing, and math.
- Simulation learning environments mirroring real life.
- E-mail and web communications for distance learning.
- Web-based resources to support student research.
- Individualized educational programs for targeted interventions.
- Classifying and sorting special education classrooms to meet student needs (Bander, 2011).

Al-Ghamdi and Al-Farani (2020) investigated special education teachers' utilization of educational technology programs, displaying sensitivity to their usefulness despite restricted knowledge and competence, requiring further training and technical support. Al-Shahri (2022) found teachers possessed medium to high awareness and favorable attitudes towards the application of educational technologies, acknowledging that constraints limit their effective utilization, requiring ongoing training.

Turki (2023) focused on problems of technology implementation among talented students, reporting mid-range use and high implementation challenges, calling for building strategies for enhancing effective integration of technology. Wardat et al. (2023) demonstrated the efficacy of ChatGPT in math education, showing that AI interactive tools enable personalized learning. Miadi and Al-Harithi (2023) reported positive teacher attitudes towards technology-based training programs in which training boosted confidence and perceived educational impact but kept skill levels moderate, in which the necessity of practical training is foregrounded.

Attia (2019) studied technology utilization among students with learning disability teachers in resource rooms and indicated identification of technology value with knowledge and skill-based barriers, indicating the need for professional development. Al-Saleh (2023) highlighted the significance of technology to meet learning needs, plan supportive environments, and enhance critical thinking. Abu Yahya and Al-Maharmeh (2018) found Jordanian teachers' medium utilization of technology and a significant correlation between teacher attitude and technology usage.

Despite much research, there remain gaps

1. Research on isolated technologies (e.g., chatbots, VR) without a comparison of applications across multiple skills.
2. Few studies accounted for the impact of continuous training on teacher ability.
3. Research on single education phases or small groups of participants, and therefore limiting generalizability.

This study tries to fill these gaps through offering a comprehensive review of the benefits and limitations of educational technology implementation in teaching students with learning disabilities, considering factors such as gender, level of education, and professional training, and aims to offer useful suggestions for Saudi school environments.

3. METHODOLOGY

The present study applied a descriptive-analytical (Descriptive-Statistical) study design, chosen due to its suitability to the study of the real practice of educational technologies by teachers for children with learning disabilities. This design allows us to establish both benefits and challenges in integrating technology, as well as the differences in opinion among teachers in relation to variables such as gender, level of education, and participation in professional training courses.

The descriptive-analytical method is particularly helpful since it enables researchers to record educational phenomena as they actually occur in natural settings, untainted by research interference, and examine data to explore inter-variables relationships and the impact on teaching practice.

This is from the premise that data collection in a structured and correct manner allows the researcher to identify teacher patterns and tendencies of behavior, assess their response to technology introduction, and establish the issues they encounter. It also allows research to investigate correlations between variables, for example, between training of teachers and the degree of technology use, or between gender and differences in perceptions regarding the benefits and constraints of learning technologies.

Descriptive-analytical research method is very appropriate for educational research to provide an overall and precise description of the teaching reality.

It provides the possibility to use data collection tools such as questionnaires and interviews and allows statistical processing to establish differences among the groups under study. Using the method, researchers can provide precise results to guide

practical and scientific recommendations for developing the integration of educational technology. Independent-samples t-tests and one-way ANOVA were employed to examine group differences, as these tests are appropriate for comparing mean scores across categorical variables; assumptions of normality and homogeneity of variance were verified, and effect sizes were reported to support the interpretation of findings.

Besides, the approach allows us to quantify the level of teachers' and students' performance, identify strengths and weaknesses in their technology use, and supply recommendations for constructing an effective and motivating learning environment. On a general basis, the descriptive-analytical method is highly aligned with the research objectives of analyzing the technology application, maintaining teacher effectiveness, and guiding maximum learning outcomes for learners with learning disabilities.

3.1. Data Analysis Procedures

After collecting the questionnaires, the researcher entered and computerized the data into a computer statistical software for analysis. Descriptive and inferential statistical methods were employed to address the research questions and aims of the study.

Descriptive Statistics Descriptive statistics, including means, standard deviations, and percentages, were employed to identify the degree of teachers' utilization of teaching technology in teaching students with learning disabilities and to establish perceived benefits and drawbacks. These figures provided a clear indication of trends and patterns of teacher responses.

Inferential Statistics For examining differences between teachers' perceptions across demographic variables, the following inferential analyses were applied

- Independent Samples t-Test: Used to identify response differences in relation to gender (male/female).
- One-Way ANOVA: Used to analyze differences regarding educational level (elementary/middle) and participation in professional development activities.

Correlation Analysis Pearson correlation coefficients were used to assess questionnaire item internal consistency and to explore associations between key variables, e.g., the association between teacher training and the level of technology integration.

Significance Level All statistical inferences were conducted at a significance level of 0.05, and statistically significant results were obtained when $p \leq 0.05$.

This analytical approach allowed the researcher to provide a clear depiction of the application and challenges of educational technologies and to examine the impact of teacher characteristics on technology integration.

The use of descriptive and inferential analyses guaranteed findings that were informative and statistically robust, providing a good foundation for practical recommendations in special education.

3.2. Internal Consistency of the Questionnaire

Table 1 presents the Pearson correlation coefficients between each item of the questionnaire and the composite score of its corresponding dimension in the main sample of 120 teachers.

The correlation coefficients ranged from 0.510 to 0.898, all statistically significant at 0.01 or 0.05 levels. These results indicate a high consistency between the items and corresponding dimensions, supporting that the items are highly correlated with the constructs that they were designed to measure.

Specifically, in the instance of the dimension Benefits of Using Educational Technologies, the correlation coefficients ranged from 0.556 to 0.844, while in the case of the dimension Challenges of Utilization, the correlation coefficients ranged from 0.510 to 0.898.

These findings attest to the high internal consistency of the tool and its suitability to accurately measure the study variables, affirming the reliability of data collection and analysis for the achievement of the research objectives.

3.3. Reliability of the Questionnaire

Table 2 demonstrates that the overall questionnaire reliability, calculated using Cronbach's alpha, was 0.866 for the 31 items. The high value corresponds to a high internal homogeneity between items, supporting the reliability of the instrument for use in the present study.

It demonstrates that the items are measuring consistently across the desired dimensions, giving consistent data collection and supporting the validity of research findings for interpretation of the phenomenon being investigated. It is significant from the table that the estimated reliability coefficient (Cronbach's alpha) of all items of the study instrument came out to be 0.866. The very high value is fine for educational studies, and it suggests that the questionnaire is highly reliable in nature, which will make it possible for the obtained results to be used confidently and objectively for achieving the study

objectives.

Table 1: Internal Consistency of the Questionnaire Items on the Advantages and Challenges of Using Educational Technology in Teaching Students with Learning Disabilities.

No.	Item	Correlation Coefficient	Significance Level
Dimension 1: Advantages of Employing Educational Technology			
1	Educational technology facilitates accomplishing tasks with less time and effort.	0.613	0.01
2	Educational technology contributes to changing the student's role from a receiver of knowledge to a seeker of knowledge.	0.712	0.01
3	It increases opportunities for collaborative work between students with learning disabilities and their teachers.	0.737	0.01
4	Educational technology reduces the psychological barrier toward the learning process.	0.565	0.05
5	Educational technology helps develop students' exploratory skills.	0.617	0.01
6	It enhances students' thinking skills.	0.724	0.01
7	It helps address individual differences among students.	0.678	0.01
8	It encourages active and cooperative learning.	0.710	0.01
9	It adds attractiveness to the presentation of educational materials.	0.602	0.01
10	It motivates students to increase their learning drive.	0.805	0.01
11	It helps in preparing interactive activity plans suitable for each student.	0.745	0.01
12	It helps in preparing organized lesson plans for each student.	0.825	0.01
13	It provides alternative learning paths for students with dyslexia in reading comprehension.	0.827	0.01
14	It provides alternative learning paths for students with dyslexia to clarify complex concepts.	0.556	0.05
15	It provides alternative paths for students with dysgraphia in written expression.	0.797	0.01
16	It improves writing skills among students with dysgraphia.	0.844	0.01
17	It provides alternative learning paths for students with dyscalculia.	0.787	0.01
18	It improves auditory and visual attention skills.	0.710	0.01
Dimension 2: Challenges of Employing Educational Technology			
19	Difficulty using educational technology by teachers.	0.594	0.05
20	Lack of awareness among some decision-makers about the importance of educational technology.	0.778	0.01
21	Scarcity of suitable Arabic-language applications.	0.675	0.01
22	Inadequate suitability of technologies for the target group.	0.785	0.01
23	Lack of sufficient experience in dealing with technologies.	0.812	0.01
24	Difficulty in using educational technology in classrooms.	0.788	0.01
25	Some technologies are incompatible with current teaching methods.	0.594	0.05
26	The use of technologies may distract students.	0.747	0.01
27	Weakness in the technological infrastructure in schools.	0.747	0.01
28	Lack of adequate technical support.	0.733	0.01
29	Lack of material or moral incentives for using technologies.	0.898	0.01
30	Limited time available to use technologies.	0.510	0.05
31	High cost of purchasing technologies.	0.747	0.01
	Total		**120**

Table 2: Cronbach's Alpha for Measuring the Reliability of the Questionnaire on the Extent to Which Teachers of Students with Learning Disabilities Employ Educational Technology in Teaching Their Students.

Number of Items	Cronbach's Alpha	Questionnaire
31	0.866	Questionnaire on the extent to which teachers of students with learning disabilities employ educational technology in teaching their students

Besides, the following definite standards were employed for interpreting the participants' level of responses based on the arithmetic means of the items in the questionnaire presented below.

Table 3: Distribution of Mean Scores According to the Scale Used in the Study Instrument.

Category	Range of Mean Scores	Response Level
First	1.00 – 1.80	Very Low
Second	1.81 – 2.60	Low
Third	2.61 – 3.40	Moderate
Fourth	3.41 – 4.20	High
Fifth	4.21 – 5.00	Very High

4. STUDY RESULTS

The first research question asked: What is the level of benefits from using educational technologies in teaching students with learning disabilities, as perceived by their teachers? To answer this question, the arithmetic means and standard deviations were calculated for the level of perceived benefits from the use of educational technologies in teaching students with learning disabilities, as perceived by their teachers. The results are presented in the following table.

Table 4: Means, Standard Deviations, and Levels of the Statements on the Advantages of Utilizing Educational Technology in Instruction of Students with Learning Disabilities.

No.	Statement	Mean	Standard Deviation	Level
1	Educational technology facilitates accomplishing tasks with minimal time and effort.	4.19	0.667	Very High
2	Educational technology contributes to changing the student's role from a knowledge receiver to a knowledge seeker.	3.42	1.227	High
3	It increases opportunities for collaborative work among students with learning disabilities and their teachers.	4.78	0.772	Very High
4	Educational technology reduces psychological barriers toward the learning process (e.g., shyness).	4.44	0.820	Very High
5	It helps develop students' exploratory skills.	4.41	0.527	Very High
6	It enhances students' thinking skills.	4.38	0.580	Very High
7	It helps accommodate individual differences among students.	4.04	0.658	High
8	It encourages students to cooperate through participatory and active learning.	3.46	0.932	High
9	It adds attractiveness to the presentation of learning materials.	4.54	0.517	Very High
10	It motivates students to increase their learning drive.	4.09	0.629	High
11	It helps in preparing interactive activity plans suitable for each student.	3.57	0.924	High
12	It helps in preparing organized lesson plans for each student.	3.76	0.932	High
13	It provides alternative learning paths for students with dyslexia to improve reading comprehension.	4.01	0.658	High
14	It provides alternative learning paths for students with dyslexia to clarify complex concepts.	3.96	0.932	High
15	It provides alternative paths for students with dysgraphia to improve written expression and composition skills.	3.88	1.227	High
16	It provides alternative paths for students with dysgraphia to improve writing skills.	4.09	0.629	High
17	It provides alternative learning paths for students with dyscalculia through step-by-step problem solving, detailed explanations, and examples.	4.04	0.629	High
18	It helps improve selective auditory and visual attention skills in students with learning disabilities.	3.56	0.832	High
Total / Overall		3.94	0.633	High

Table (4) shows that the arithmetic means of items related to advantages of applying educational technology in teaching learning disabled students varied from (3.42–4.78). All the items were rated high, but items (1, 3, 4, 5, 6, and 9) had lower mean. The overall mean score of the whole axis was (3.94), a high score.

This result indicates that educators of learning disability students acknowledge educational technologies as having important strengths in teaching their students. This is also consistent with the results of Al-Ghamdi and Al-Farrani (2020), Al-Shahri (2022), Wardat et al. (2023), and Maydi and Alharthi (2023).

This can be attributed to increased awareness among male as well as female teachers of the necessity to include educational technology in teaching students with learning disabilities, as well as the diversity of special training courses and professional development sessions in this field. Additionally, such students normally possess average or normal intelligence levels but face particular learning or developmental challenges that are either correctable or manageable using educational technologies, particularly with the increased incidence of Arabic-language educational software.

And as for the second research question that stated "What are the barriers to employing educational technology in teaching students with

learning disabilities from their teachers' perspectives?", arithmetic means and standard deviations of student with learning disabilities' teachers' difficulties in this context were calculated, which are shown in the table below.

Table 5: Means and Standard Deviations of the Problems Faced by Teachers of Learning Disability Students in Utilizing Educational Technology in Teaching Their Students, from Their Perspective.

No.	Statement	Mean	Standard Deviation	Level
1	Difficulty of employing educational technology by teachers in schools.	3.47	1.667	High
2	Lack of awareness among some school decision-makers about the importance of educational technology.	4.12	1.227	High
3	Arabic applications that support teaching students with learning disabilities are insufficient in educational technology.	4.48	1.772	Very High
4	Weak suitability of available educational technologies for the characteristics of the target group of students with learning disabilities.	4.24	1.820	Very High
5	Scarcity of sufficient experience among teachers in using educational technology.	4.22	1.527	Very High
6	Difficulty in handling educational technology in the teaching process.	4.38	1.580	Very High
7	Educational technologies are not suitable for current teaching methods used in schools.	4.42	1.658	Very High
8	Using educational technology in the classroom may distract students.	4.66	1.932	Very High
9	Weak technological infrastructure in inclusive schools.	4.44	1.517	Very High
10	Inadequate technical support for employing educational technology.	4.19	1.429	High
11	Lack of material or moral incentives for employing educational technology in teaching.	4.77	1.924	Very High
12	Lack of sufficient time to employ educational technology in teaching.	4.19	1.667	High
13	Schools' limited ability to purchase educational technologies due to high prices.	4.20	1.227	High
Total / Overall		4.56	1.922	Very High

The above table (5) shows that the arithmetic means of the statements relating to the axis of hindrances to the application of educational technology in teaching students with learning disabilities ranged between (4.12–4.77). All the items were rated very high, with the exception of items (1, 2, 10, 12, and 13), which were rated high. The overall mean rating for this axis was (4.56), which was very high. This result suggests that teachers of students with learning disabilities experience a lot of challenges in applying and integrating educational technology in teaching in a very high degree from their own perspective. This finding is consistent with those of Al-Ghamdi and Al-Farrani (2020) and Al-Shahri (2022).

Such a development would be traced to the multiplicity of challenges that hinder the effective use of education technologies whether technical, human, or financial—and which in turn limits optimal gain from such technologies in educating this segment. This points to the need for policymakers and education planners to fill the gap by making available the necessary material, human, and technical resources towards enhancing the quality of education.

The second possible rationale behind getting this outcome is the lack of interest of some teachers and school-level decision-makers in the implementation of educational technologies, coupled with low parents' awareness and their few requests for the use of such technologies either at home or school. This indicates the sheer need for an orderly intervention towards overcoming these impediments and improving the learning environment of students with learning disabilities.

Additionally, the outcome can be attributed to a deficiency in knowledge of the competence of educational technology by special education teachers, coupled with the absence of relevant practical training programs that emphasize practice over theory. This deficiency sets back the readiness and ability of teachers to utilize these technologies efficiently. Additionally, the absence of facilitative school environments, inadequate infrastructure, and limited material resources available to students and teachers exacerbates the problem.

It is interesting also to notice that some teachers believe that employing educational technology requires more effort than other teaching practices, especially due to the high number of students in classes, and thus it is difficult to implement and apply such technology during the teaching process.

The third research question stated: "Are there statistically significant differences in teachers'

responses regarding the use of educational technology attributed to gender, educational stage, or participation in training courses?"

Table (6) indicates that the T-test was conducted to determine whether there were differences in the mean responses of male and female teachers of students with learning disabilities on the use of education technology. The p-value obtained (0.714) was larger than the significance level (0.05), which reveals no statistically significant differences between the two groups. This finding suggests that both male and female instructors shared the same sentiments regarding the use of educational technologies to improve teaching and learning processes for this cohort, suggesting mutual knowledge of their importance regardless of gender.

Table 6: Teachers' Use of Educational Technology in Teaching Students with Learning Disabilities by Gender.

Variable	Gender	Mean	Standard Deviation	t-value	Significance Level
Use of educational technology in teaching students with learning disabilities	Male	3.42	0.189	0.821	0.714
	Female	3.69	0.177		

In the table above, the T-value calculated was (0.821), and the significance level (p-value) was (0.714). Thus, it can be concluded that there are no statistically significant differences in the mean scores of male and female teachers of learning-disabled students on the perceived benefits of using educational technology in teaching their students, due to the variable of gender. That is, gender does not affect the level of perceived benefits of using educational technology in teaching learning-disabled students.

The researcher attributes this result to the reality that school environments, academic settings, and training opportunities related to the use of educational technology are likewise available for both sexes. Also, both male and female teachers experience equivalent issues and problems in this respect.

And as for the difference in the respondents' answers about the perceived advantages of utilizing and applying educational technology among learning-disabled students because of the level of education, a T-test was conducted to compare elementary school learning disabilities teachers' responses and intermediate school learning disabilities teachers' responses. The results are shown in the following table.

Table 7: Comparison of Teachers' Use of Educational Technology Means in Teaching Students with Learning Disabilities across Educational Stage.

Variable	Educational Stage	Mean	Standard Deviation	t-value	Significance Level
Use of educational technology in teaching students with learning disabilities	Primary	3.47	1.647	0.711	0.644
	Middle	4.14	1.444		

The results show that the value of the T-test was (0.711) and the level of significance (p-value) was (0.644), meaning that there were no differences at the statistical level between the average scores of the teachers of students with learning disabilities in the elementary and intermediate stages regarding their use of educational technology in teaching their students. Therefore, the educational stage did not affect the level of technology integration.

The researcher relates this finding to the fact that both stages' teachers share the same visions regarding the benefits of utilizing educational technology for developing the school climate, academic environment, education programs, and extracurricular and classroom activities, without any traceable differences between them. Additionally, the same issues and barriers are faced by all of the teachers in utilizing educational technologies.

For the differences in the perceptions of participants on the advantages of using and applying educational technology for learning-disabled pupils as a result of participating in training courses, a T-test was conducted to compare teachers who had received training courses with those who had not received any training in educational technology. The results are presented in the following table.

Table 8: Means, Standard Deviations, and t-Value of Learning Disabilities Teachers' Positive Use of AI Applications by Training Courses Variable.

Variable	Training Courses	Mean	Standard Deviation	t-value	Significance Level
Use of educational technology in teaching students with learning disabilities	Attended training courses	4.19	1.647	0.5012	0.05
	Did not attend training courses	3.48	1.444		

The table above shows that the value of the T-test was (0.5012) and the significance level (p-value) was (0.05). Therefore, it is possible to conclude that there are statistically significant differences between the mean scores of the teachers who have been exposed to training courses and those who have not been exposed to any training in educational technology, in favor of teachers exposed to such training.

This result is explained by the researcher on the grounds that teachers who have undergone training programs in educational technology are more aware and acquainted with the worth and usefulness of using it in the learning process. They have learned through training that educational technologies can facilitate the learning process for students with learning disabilities more than traditional methods through the use of pictures, handmade colored cards, or standard videos. Educational technologies also help in presenting information in a faster and clearer manner, which enhances students' understanding and comprehension.

This study is subject to certain limitations. The use of self-reported data may introduce response bias, as participants could overestimate or underestimate their actual use of educational technology. Additionally, the sample was limited to a specific group of elementary teachers, which may restrict the generalizability of the findings to other educational levels or contexts. Future research could incorporate classroom observations or mixed-method approaches to validate and enrich the self-reported data.

5. DISCUSSION

The study revealed a high level of educational technology integration reported by teachers of students with learning disabilities. This report reflects that teachers strongly consider the value of technology in enhancing engagement when applying differentiated instruction and addressing individual learning needs. Last but not least, consistent results aligned with previous studies to ensure the positive effectiveness of applying technologies in special education contexts (Al-Ghamdi & Al-Farani, 2020; Al-Shahri, 2022; Wardat et al., 2023). Another view of the results, teachers referred to a high level of challenges when applying educational technologies.

These challenges include the lack of Arabic-language applications, weak infrastructure, lack of incentives, limited technical support, and inadequate training. As revealed by previous studies, educational technology requires institutional readiness, technical resources, and continuous professional development (Smaili, 2023; Turki, 2023), which raises the view of the challenges. The results of the gender and educational stage show an absence of statistically significant differences, due to similar perceptions regardless of demographic variables. The combined orientation of this result supports educational policies, similar working conditions, and equal access to professional development opportunities across schools, a finding aligned with the goal of Abu Yahya and Al-Maharmeh (2018) study.

As shown in the results, participating in the training courses conversely indicated a high level of technology integration by teachers. The consequences of this result ensure the significant role of professional development in enhancing teachers' competence, confidence, and instructional effectiveness when using educational technologies (Miadi & Al-Harithi, 2023; Papastratis et al., 2021). In addition to these results, recent studies enable the national efforts to the digital transformation in education aligned with Saudi Vision 2030, such as (Alsudairy & Eltantawy, 2024).

6. CONCLUSION

As a result, education technology was revealed as a very useful tool for enhancing instructional quality and promoting inclusive education, as indicated by teachers who work with students with learning disabilities. Several challenges were encountered with using it to its full potential, especially those related to infrastructure, training, and technical support. The result of the teachers' perceptions was revealed as having lack of differences within gender and educational level; whereas their involvement in

the training programs was revealed as greatly improving the technology integration. Professional development, enhanced technology infrastructure, and institutional support were required to maximize the effectiveness of educational technology in special education. When addressing these particular issues, students with learning disabilities' outcomes will be supported and improved.

7. RECOMMENDATIONS

In light of the study's findings, **the researcher hereby recommends the following**

1. Provide incentives and rewards for teachers who integrate educational technologies into the teaching process.
2. Provide training for teachers on how to use educational technologies effectively in teaching students with learning disabilities.
3. Equip educational environments with electronic equipment necessary to enable the integration of educational technologies.
4. Offer continuous technical and technological support to teachers to allow them to use digital tools effectively.
5. Encourage schools to adopt technology-based instructional methods that align with the needs of learning-disabled students.
6. Leverage the motivational and enthusiastic momentum of teachers by involving them in development projects and field experiments, and rewarding their efforts in technology integration to inspire further innovative education activities.
7. Emphasize the importance of utilizing educational technologies in teaching students with learning disabilities at the elementary and intermediate levels, preparing all stakeholders in the educational process in advance for gradual application to achieve success and reach educational goals.
8. There is a need to evaluate and develop the process of implementing educational technologies for students with learning disabilities after the elementary level to achieve more outcomes.
9. Develop programs that facilitate collaboration among local community institutions and the education sector to achieve the goals of learning disabilities programs in line with Saudi Vision 2030. This involves efficient training for students to help them overcome academic and social challenges, as well as providing qualified teachers to implement education programs with international best practices.

Acknowledgements: The author sincerely acknowledges the teachers who generously devoted their time, perspectives, and substantive contributions to this research. Appreciation is also extended to the Ministry of Education for its support in enabling access to schools for data collection. The author also acknowledges the valuable contributions of the peer reviewers and anonymous editors, whose expertise and constructive critiques significantly enhanced the rigor and scholarly quality of this study.

Disclosure of Interests: The author declares that there are no conflicts of interest associated with this work.

Finding Statement: This research was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia (Grant No. KFU254037).

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