





Employing technology inside and outside the classroom by special education teachers in primary schools

 **Yusra Jadallah
Abed Khasawneh¹⁺**

 **Abdullah Saleh
Alanazi²**

**Abdullah Ahmed
Almulla³**

 **Mohamad Ahmad
Saleem Khasawneh⁴**

¹Department of Educational Administration, Faculty of Educational Sciences, Ajloun National University, Jordan.

Email: yusrajadallahabedkhasawneh@gmail.com

²Special Education Department, University of Hail, Saudi Arabia.

Email: a.s.alanazi@hotmail.com

³Special Education Department, King Faisal University, Saudi Arabia.

Email: aamulla@kfu.edu.sa

⁴Special Education Department, King Khalid University, Saudi Arabia.

Email: mkhasawneh@kku.edu.sa



(+ Corresponding author)

ABSTRACT

Article History

Received: 19 July 2023

Revised: 16 October 2023

Accepted: 29 November 2023

Published: 9 January 2024

Keywords

Classroom activities
Educational technologies
Extracurricular activities
Special education
Students
Teachers' attitudes.

The study aimed to identify the degree of employing educational technology inside and outside the classroom in Abha, Saudi Arabia. The study adopted the descriptive approach as the most appropriate to achieve the objectives. The study sample was selected randomly from special education teachers in Abha, Saudi Arabia. A total of 300 teachers, comprising both females and males, participated in the study. The study instrument was a questionnaire, which consisted in its initial form of 20 paragraphs and was distributed in two fields: using ICT in teaching inside and outside the classroom. The instrument was verified for validity and reliability. This study focused on identifying the levels of employment of educational technology in the educational process by special education teachers in several public schools in Abha City, Saudi Arabia. The findings showed medium use of information and communications technology (ICT) tools inside and outside the classroom. The study concluded that the degree of employing educational technology in the educational process in Abha schools from the teachers' point of view was medium. The findings revealed that regardless of the teacher's gender or academic qualification, they employ educational technology at nearly the same level. The study recommended training teachers on the use of technology in different educational situations to promote the educational experience for teachers and students.

Contribution/Originality: This study can serve as a springboard for educators to move away from indoctrination and into the realm of educational technology. By introducing sound and picture, which are the most crucial components of education in the researchers' opinion, this study is anticipated to inform educational specialists about the significance of educational technology in the educational process.

1. INTRODUCTION

The twenty-first century has seen several changes in all facets of society, but the most significant are the technical domains that have proliferated—including the Internet, computers, and mobile phones—along with several more recent advancements and fresh difficulties. One of these changes is the elimination of time and space barriers, which allowed for quick and efficient communication thanks to the role of communication and information technology in the dissemination of news and information as well as in the communication process itself (Paesani,

Allen, & Dupuy, 2015). Because it is a tool for communication and communication through the Internet, the computer is one of the most cutting-edge and effective technical developments (Schulze, Schultze, West, & Krumm, 2017). Education is undergoing changes and transformations in all parts of the developed world because educational institutions are social institutions that have a significant impact on the achievement of intellectual capital development, technological advancement, the development of the knowledge economy, and the balance between maintaining self-identity and openness to the global community (Kern, 2014). This century has seen the emergence of modern technology, informatics, civilization, and methods for utilizing these to their full potential. Perhaps this is the main obstacle facing educational institutions, especially in less developed cultures. On the other hand, developed cultures adopted the drivers of growth and made efforts to stay up to them (Rego, 2015).

Just as the role of the learner has changed as a result of the introduction of educational technology, the role of the instructor has altered to convey his new duties (Benson, 2015). The learner is no longer only a passive recipient. Presentation and evaluation strategies, as well as teaching students how to educate themselves and customize their education, have all become important components of proficiency-based educational systems and equal opportunity policies. According to Lin, Warschauer, and Blake (2016), the use of educational technology has had an extraordinary and quick influence on the educational process and how well both teachers and students perform. Tools for research and discovery, communication with schools, research institutes, libraries, etc., and contributions to the preservation, dissemination, and transmission of information. Education was transformed from traditional methods to individual electronic methods. This resulted in the development of creative thinking, problem-solving techniques, and scientific thinking abilities, as well as the achievement of long-term learning (Aaen & Dalsgaard, 2016; Erdogan, 2008). The primary force behind design and implementation is education. To expand knowledge and keep up with the progress occurring in industrialized nations, the use of contemporary technology and the Internet in the educational process has become essential (Muhingi et al., 2015). One of the most significant areas for investment that has an impact on society is education. Since students are the most susceptible to being impacted and influenced, this study highlights the significance of integrating educational technology into the teaching and learning process in Abha schools in Saudi Arabia. Students are the basic building blocks on which society is built due to their latent abilities and enormous capacity to acquire individual knowledge and future thinking (Khasawneh & Khasawneh, 2023).

1.1. Problem Statement

The purpose of education is to help students develop the skills, capacities, and self-reliance they need to engage with the changes in the world around them, as well as information and facts. The number of educational approaches has increased, and one of these is e-learning, which relies on the dissemination of information using electronic instruments both within and outside of the classroom. There is currently a challenge for educators and those in charge of the educational process due to the information revolution and the growing use of educational technologies. To keep up with the information age, educators and those in charge of the educational process may benefit from using these technologies by developing new methods and techniques in education.

The Internet is employed in the educational process for all of its functions, including practice, getting access to different educational programs, and getting the most recent research in a variety of academic subjects. Individually or in groups, students can contribute to their work and share their thoughts, research, and points of view within or outside the classroom. Since school children are among the most active age groups, instructors may present the scientific content in a better and more engaging way. It is the central axis around which the general cultural life revolves. The study focuses on how few public schools in Abha, Saudi Arabia, use educational technology in the teaching and learning process. It was believed that the following major issue characterized the study: What percentage of instructors in Abha's public schools use instructional technology both inside and outside of the classroom?

1.2. Research Objectives and Questions

The study aimed to identify the degree of employing educational technology inside and outside the classroom in Abha Saudi Arabia. The study attempted to answer the following questions:

1. What is the level of employing educational technology inside and outside the classroom in public schools from the teachers' point of view?
2. Are there statistically significant differences in the level of employing educational technology inside and outside the classroom according to the variables of gender and educational qualification?

1.3. Significance of the Study

The significance of this work may be attributed to how important the subject is. The research examines how public school instructors use communication technologies to better their students' education. ICT has become significant to people in charge of educational institutions as a valuable resource for information that can be shared with students as well as an effective instructional tool if handled properly. The Ministry of Education will gain from the study's findings as it works to create an environment that is instructive, unconventional, and able to convey knowledge in all of its nuances while inspiring pupils to think critically and creatively. Teachers will benefit from the findings. This study can serve as a springboard for educators to move away from indoctrination and into the realm of educational technology. By introducing sound and picture, which are the most crucial components of education in the researchers' opinion, this study is anticipated to inform educational specialists about the significance of educational technology in the educational process.

2. LITERATURE REVIEW

Teachers use computers, just like they use any other new teaching tool, to help with their usual teaching methods. The sustainability of using ICT tools in classrooms is possible, just like other types of innovations (Gumbo, Makgato, & Muller, 2012). Computers and ICT tools have special qualities that make it difficult to continue using them and make them bigger. This means that the expenses for equipment, which are constantly changing, and the specific knowledge and skills needed by teachers are included. Researchers observed the difficulties that teachers experienced when many computers were introduced into schools. Experienced teachers went through three stages of getting used to the new technology: initially just trying to survive, then becoming experts in using it, and finally using it to keep control of the classroom (Maja, 2023; Rice, 2022). These stages were similar to their experiences when they first started teaching.

In special education, there have been several discussions on the topic of e-inclusion. Digital inclusion means more than just having access to resources. It also means being able to make a good choice about when to use technology and when not to use it (Alawajee & Almutairi, 2022). Digital inclusion is not just about using technology every day, but about smartly using technology. Researchers defined e-inclusion practices as the use of digital tools by or in collaboration with people who have learning difficulties. It is about how these tools are used and the interaction between them, the context, and the people (Khasawneh, 2023). In most cases, people usually only think of technology as digital devices like computers, smartphones, and tablets. This definition restricts the many different things that help people learn, and specifically, how teachers give knowledge to students. Teachers are using more and more technology like movies, pictures, recordings, and written documents to teach all subjects, especially languages (Nurdyansyah, Arifin, Astutik, & Rais, 2022).

Students nowadays need to have some level of skill in using technology to get the most out of their learning experiences. Despite some scholars and researchers arguing about the benefits of technology, others have a negative opinion. They see technology as harmful and believe it has had bad effects on the reading and thinking abilities of young people. The way we access information in the 21st century has caused some problems for students (Shagiakhmetova et al., 2022). It has made their experiences disconnected, made it harder for them to think logically

and critically, and made them care less about other people. This means that even though there are advantages, there have been problems, especially when it comes to the students' social lives (Gumbo et al., 2012).

Teachers often struggle with deciding whether or not to use technology inside and outside the classrooms. They worry about making the best choice for how to bring technology into the learning environment. But it is important to know that teachers have to use technology, so they have to figure out how to use it in the students' learning (Khasawneh, 2023a). Technology is everywhere and has become a big part of almost everything we do. Today, teaching students with special needs without using new technology might give learners limited practice that does not meet their needs or achieve their goals (Sulasmi & Akrim, 2019). Teachers need to focus on using technology in their teaching because it has a big impact on how students learn and understand several topics. It is not about whether technology is good or bad, but rather about recognizing its important role in education.

2.1. Previous Studies

Siyam (2019) explored why special education teachers choose to use technology and how it affects their work. The study selected 24 special education teachers from a private school in the UAE to answer questions on a computer. The questions were about how useful and easy to use technology is, their attitudes towards using it, their intention to use it, their access to technology, how relevant it is to their job, how confident they are in using it, how much time they have, and how often they use it. The researchers discovered that a person's belief in their abilities, the amount of time they have available, and their access to technology all had a big impact on how much they used technology. The research findings show how special education teachers feel about using technology in their work and what things might help or make it harder for them to use technology.

Parmigiani, Benigno, Giusto, Silvaggio, and Sperandio (2021) explored the use of ICT in schools after the schools closed because of the COVID-19 pandemic. The study used a questionnaire with six open-ended questions to collect qualitative data from 785 teachers. The results show that e-inclusion was successful when technologies, relationships with families, collaboration among teachers, and online teaching strategies all worked together. Specifically, teachers need to make personalized activities for students to do online, both in real-time and on their own. It is best if students can do these activities in small groups or by themselves.

Cakir and Korkmaz (2019) explored special computer programs that use augmented reality to help people with special education needs. There were four teachers and six students in the study group. The study used different forms to collect information. Based on the results, using ICT teaching material can help children with special education needs develop by giving them real-life experiences. Additionally, it was noticed that the students were more interested and excited about the lesson while they were applying what they learned. Their preparedness for the lesson improved; they became more interested in the subjects; and they were more active and likely to answer questions correctly. Based on the results, we can recommend using this new AR technology to help kids with special education needs improve.

Fernández-Batanero, Montenegro-Rueda, and Fernández-Cerero (2022) investigated how well primary school teachers in Spain know and understand how to use technology to help students with special needs. In this study, the researchers used a combination of quantitative and qualitative methods to collect data. They gathered information from 777 questionnaires completed by primary school teachers and also conducted 723 interviews with important people involved in education, such as members of management teams, ICT coordinators, directors, and technical advisors of teacher training centres.

The findings told teachers what they knew about using technology for disabled students and what problems they faced when learning about it. Among the findings, one of the main issues was that teachers were not properly trained to use technology for students with special needs. There was also a lack of opportunities for teachers to gain experience in this area.

3. METHODOLOGY

The study adopted the descriptive approach as the most appropriate to achieve the objectives of the study, especially since it is concerned with studying the phenomenon as it is, through collecting and analyzing data, presenting and analyzing the results, and interpreting them through their connection to reality.

3.1. Sampling

The sample for the study was selected randomly from special education teachers in Abha City, Saudi Arabia. 300 female and male teachers participated in the study. The following table presents the demographic information of the sample.

Table 1. The demographic information of the sample.

Variable	Classification	Frequency	Percentage
Academic qualification	Bachelor	210	61.38
	Post-graduate	90	38.62
Gender	Male	160	39.70
	Female	140	60.30
Total		300	%100

Table 1 shows that most of the participants in the study were bachelor's degree holders. The majority of the participants were also male teachers.

3.2. Instrument of the Study

The theoretical literature and earlier research that were relevant to the study's topic were taken into consideration when developing the study instrument. It was created as a questionnaire with 20 paragraphs in total, divided into two sections that covered the use of ICT in teaching both inside and outside of the classroom. Five criteria—always, frequently, seldom, and never—were used to choose the responses.

Presenting the research instrument to a group of specialists from among the faculty members with expertise in special education and educational administration allowed the validity of the tool to be confirmed. They shared their thoughts and views on whether the questionnaire's paragraphs were suitable for the study. The questionnaire contained 20 paragraphs after adjustments were made based on the judges' evaluations.

A sample of 20 male and female instructors outside of her sample was used to apply and reapply (Retest) the instrument to confirm its reliability. The instrument's 0.87 stability score is regarded as appropriate for use in the study.

4. RESULTS

The following section presents the results of the study. To answer the first question, the mean scores and standard deviations of the level of employing educational technology inside and outside the classroom by special education teachers were extracted from the teachers' point of view. The results present the responses of the sample in each field of the questionnaire, as shown in Table 2.

Table 2. The results of teachers' responses to the fields of the questionnaire.

Rank	No.	Fields	Mean score	ST. dev.	Level
1	1	Inside the classroom	2.50	0.63	Medium
2	2	Outside the classroom	2.13	0.75	Medium
Total			2.17	0.73	Medium

Table 2 shows that the mean scores ranged between (2.13-2.50), where applying ICT inside the classroom came first with the highest mean score of (2.50), with a standard deviation of (63), and with a medium degree. In the second order came applying ICT outside the classroom, with a mean score of 2.13 and a standard deviation of 0.75, for a medium score. The significance of using ICT tools to assist teachers and students justifies the level of educational technology use inside the classroom. Schools' administrations and educational supervisors always urge teachers to use modern ICT tools in their classrooms to deliver their lessons.

The findings showed medium levels of use of ICT tools inside and outside the classroom. The reason for such medium levels could differ from school to school. The availability of computers and other ICT tools contributes to teachers' use of them in the classroom. The teacher's knowledge of technology also plays an important role in the level of employing ICT tools inside or outside the classroom.

The questionnaire also aimed at identifying the differences in teachers' attitudes towards employing technology according to the teachers' gender and qualifications. To answer the second question of this study, the mean scores and standard deviations of the teachers' responses were extracted according to the variables of gender and academic qualifications, as shown in the following table.

Table 3. Results of the teachers' responses according to the variable of gender.

Field	Gender	Mean score	F value	Freedom value	Sig.
Using ICT inside the classroom	Male	2.53	2.18	358	0.14
	Female	2.49			
Using ICT outside the classroom	Male	2.29	0.33	358	0.57
	Female	2.08			

It is clear from the results shown in Table 3 that there are no statistically significant differences in the estimates of the study sample members and the reality of the employment of educational technology in the educational process in Abha schools, according to the gender variable.

The level of employing educational technology inside and outside the classroom by teachers was also calculated according to the variable of academic qualifications, as shown in the following table.

Table 4. Results of the teachers' responses according to the variable of academic qualification.

Field	Gender	Mean score	F value	Freedom value	Sig.
Using ICT inside the classroom	Bachelor	2.55	2.18	358	0.14
	Post-graduate	2.39			
Using ICT outside the classroom	Bachelor	2.15	0.325	358	0.57
	Post-graduate	2.08			

It is clear from the results shown in Table 4 that there are no statistically significant differences in the estimates of the study sample members of the reality of employing educational technology in the educational process in Abha schools from the teachers' point of view, depending on the educational qualification variable.

5. DISCUSSION

The study concluded that the degree of employing educational technology in the educational process in Abha schools from the teachers' point of view was medium. The results agree with previous studies on the level of use of ICT in schools (Fernández-Batanero et al., 2022; Parmigiani et al., 2021; Siyam, 2019). These studies showed that teachers prefer using ICT tools inside the classroom to help in the educational process. Teachers in Abha City use educational technologies inside the classroom more than outside of it. This could be because schools have restrictions on using social media or other tools to communicate with students outside the classroom. The schools' administrations focus on developing the educational experience inside the school by providing the teachers and

students with different ICT tools. Therefore, the results showed that the levels of employing ICT tools inside and outside the classroom were medium from the teachers' point of view.

The results also demonstrated that there were no gender or educational variations between the teachers' use of ICT tools inside and outside the classroom. The findings are consistent with other research (Cakir & Korkmaz, 2019; Parmigiani et al., 2021), which found that male and female instructors had comparable views regarding adopting ICT aids in the teaching process. Due to the fact that modern technology does not prioritize men over women, all primary and secondary schools, mixed-gender schools, and schools for both males and females must use educational technology in the educational process. The improvement of the educational process and teacher professional development are important to the Ministry of Education. The results also revealed that there were no statistically significant differences based on the level of education. The fact that all teachers receive the same level of education and training before and during their employment, regardless of whether they hold master's degrees or bachelor's degrees, may help to explain this. Instead of the teacher's personal educational preferences, this may also explain it.

6. CONCLUSION

This study focused on identifying the levels of employment of educational technology in the educational process by special education teachers in several public schools in Abha City Saudi Arabia. The findings showed medium levels of use of ICT tools inside and outside the classroom. The teacher's knowledge of technology also plays an important role in the level of employing ICT tools inside or outside the classroom. The study concluded that the degree of employing educational technology in the educational process in Abha schools from the teachers' point of view was medium. Special education teachers employ ICT tools in the classroom more than outside the classroom. They always tend to follow the available tools inside the schools. The findings revealed that regardless of the teacher's gender or academic qualification, they employ educational technology at nearly the same level.

7. RECOMMENDATIONS

The study recommends increasing the levels of employing educational technologies by special education teachers in Abha City, Saudi Arabia. It is also recommended that teachers become aware of the importance of follow-up communication outside the classroom with students for educational purposes. The study also recommends the Ministry of Education provide schools with up-to-date ICT tools to help teachers and students in the educational process.

8. LIMITATIONS OF THE STUDY

This study was limited to its sample size and the application of its instrument. The results were limited to the sincerity of the participants in responding to the instrument. The findings were also limited to schools in one district in Saudi Arabia.

Funding: This research is supported by King Khalid University (Grant number: RGP.2 / 293 / 44).

Institutional Review Board Statement: The Ethical Committee of the King Khalid University has granted approval for this study on 1 May 2023 (Ref. No. RGP.2 / 293 / 44).

Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

REFERENCES

- Aaen, J., & Dalsgaard, C. (2016). Student facebook groups as a third space: Between social life and schoolwork. *Learning Media and Technology*, 41(1), 160-186.
- Alawajee, O. A., & Almutairi, H. A. (2022). Level of readiness for in-class teaching among teachers of students with special educational needs: Post-COVID-19. *Eurasian Journal of Educational Research*, 10, 1-20. <https://doi.org/10.14689/ejer.2022.98.01>
- Benson, P. (2015). Commenting to learn: Evidence of language and in-tercultural learning in comments on Youtube videos. *Language Learning & Technology*, 19(3), 88-105.
- Cakir, R., & Korkmaz, O. (2019). The effectiveness of augmented reality environments on individuals with special education needs. *Education and Information Technologies*, 24(2), 1631-1659.
- Erdogan, Y. (2008). An evaluation of web based instruction in view of the tutors' and students' perspectives. *Turkish Online Journal of Distance Education*, 9(2), 86-96.
- Fernández-Batanero, J. M., Montenegro-Rueda, M., & Fernández-Cerero, J. (2022). Are primary education teachers trained for the use of the technology with disabled students? *Research and Practice in Technology Enhanced Learning*, 17(1), 1-22. <https://doi.org/10.1186/s41039-022-00195-x>
- Gumbo, M., Makgato, M., & Muller, H. (2012). The impact of in-service technology training programmes on technology teachers. *Journal of Technology Studies*, 38(1), 23-33.
- Kern, R. (2014). Technology as Pharmakon: The promise and perils of the internet for foreign language education. *The Modern Language Journal*, 98(1), 340-357. <https://doi.org/10.1111/j.1540-4781.2014.12065.x>
- Khasawneh, M. A. (2023). Analysis of the application of pedagogical technology to the learning of children with ASD. *International Journal of Special Education*, 38(1), 82-89. <https://doi.org/10.52291/ijse.2023.38.8>
- Khasawneh, M. A. (2023a). The use of video as media in distance learning for deaf students. *Contemporary Educational Technology*, 15(2), ep418. <https://doi.org/10.30935/cedtech/13012>
- Khasawneh, M. A. S., & Khasawneh, Y. J. A. (2023). Analyzing the effectiveness of mobile devices and apps in supporting learning. *Migration Letters*, 20(S1), 901-910.
- Lin, C., Warschauer, M., & Blake, R. (2016). Language learning through so-cial networks: Perceptions and reality. *Language Learning & Technol-ogy*, 20(1), 124-147.
- Maja, M. M. (2023). Teachers' perceptions of integrating technology in rural primary schools to enhance the teaching of English first additional language. *Journal of Curriculum Studies Research*, 5(1), 95-112. <https://doi.org/10.46303/jcsr.2023.8>
- Muhingi, W. N., Mutavi, T., Kokonya, D., Simiyu, V. N., Musungu, B., Obondo, A., & Kuria, M. W. (2015). Social networks and students' performance in secondary schools: Lessons from an open learning centre, Kenya. *Journal of Education and Practice*, 6(21), 171-177.
- Nurdyansyah, N., Arifin, M. B. U. B., Astutik, I. R. I., & Rais, P. (2022). Online inclusive school: A technological breakthrough in inclusive education during the Covid-19 period. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, 8(4), 806-816. <https://doi.org/10.33394/jk.v8i4.5995>
- Paesani, K., Allen, H., & Dupuy, B. (2015). *A multiliteracies framework for collegiate foreign language teaching*. New York: Pearson.
- Parmigiani, D., Benigno, V., Giusto, M., Silvaggio, C., & Sperandio, S. (2021). E-inclusion: Online special education in Italy during the Covid-19 pandemic. *Technology, Pedagogy and Education*, 30(1), 111-124.
- Rego, I. (2015). Mobile language learning: How gamification improves the experience. *Handbook of Mobile Teaching and Learning*, 76(1), 1-12. https://doi.org/10.1007/978-3-642-41981-2_76-1
- Rice, M. F. (2022). Special education teachers' use of technologies during the COVID-19 era (Spring 2020—Fall 2021). *TechTrends*, 66(2), 310-326. <https://doi.org/10.1007/s11528-022-00700-5>
- Schulze, J., Schultze, M., West, S. G., & Krumm, S. (2017). The knowledge, skills, abilities, and other characteristics required for face-to-face versus computer-mediated communication: Similar or distinct constructs? *Journal of Business and Psychology*, 32(3), 283-300.

- Shagiakhmetova, M. N., Bystritskaya, E. V., Demir, S., Stepanov, R. A., Grishnova, E. E., & Kryukova, N. I. (2022). Primary teachers difficulties related to compulsory distance education during COVID-19. *Contemporary Educational Technology*, 14(2), ep357. <https://doi.org/10.30935/cedtech/11589>
- Siyam, N. (2019). Factors impacting special education teachers' acceptance and actual use of technology. *Education and Information Technologies*, 24(3), 2035-2057.
- Sulasmı, E., & Akrim, A. (2019). Management construction of inclusion education in primary school. *Kumpulan Makalah, Jurnal Dosen*, 1(1), 334-342.

Views and opinions expressed in this article are the views and opinions of the author(s), Humanities and Social Sciences Letters shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.