Obstructions of Using Educational Technology in Gifted Students' Schools In Jeddah: Learners' Voices

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Abstract
This study touched on the limitations of educational technologies in gifted students' schools depending on the learners' viewpoints. The descriptive approach was used, and the tool was represented in a questionnaire distributed to a sample of 196 gifted secondary school students in Jeddah. Results showed moderate obstacles to educational technologies in gifted students' schools. The general mean of the responses of the study sample was 2.76. based on the findings, the author suggested some recommendations to reduce the difficulties that gifted students face in using educational technologies, as well as provide gifted students with electronic applications in order to their development, and especially the development of school buildings for gifted students with modern devices to help them facilitate the use of technology.

Keywords:
Educational Technology, Gifted Students, Educational Process.

1. Introduction

It is worth noting that development in computer technologies and the services they provide after connecting many computers worldwide has become, and its use has begun to spread widely in various fields. This is what made educators call to think seriously about employing it in the educational process to improve and develop the education process by using it to be a means and the main source of additional information that teachers and students obtain about the subject [1].

It goes without saying that progress and advancement of nations depend highly on humans in general and talented individuals in particular who are considered to be resourceful for countries' prosperity. Hence, care for them leads to states' leadership in all professions and specializations [2]. The tremendous development in computer technologies and their services of connecting many computers worldwide has become, and its use has spread widely in various fields. Educators call for thinking seriously about employing it in the educational process to improve and develop it as the primary source of additional information about the subject [1]. It is inevitable to employ teaching techniques, tools, and innovations in the classroom to improve the teaching for supporting the learning process and improving the degree of teaching effectiveness.

There is a dire need for specialized programs for gifted students to help them sharpen their talents, accelerate, and improve their performance [3]. In Saudi Arabia, there is now a worthwhile focus on discovering gifted and talented students, nurturing them, and developing their skills. This supports the sustainable development of the kingdom and aligns with its vision (2030). The Ministry of Education has given this category of learners special attention and care since 1995. It established a department that cares for gifted and talented students, represented in the Department of Care for the Gifted and the Talented [4]. The education policy in Saudi Arabia since 1969 stipulated multiple articles in its clauses that focus on the care of the gifted (57-192, 193-194) [5].

Despite the great potential that gifted students embrace and their distinction in various aspects, they face some obstacles that prevent them from obtaining educational services. Prior research indicated few enrichment programs dedicated to gifted students in the eastern region and the weakness of the equipment and techniques. [6] identified educational techniques used in developing proficient skills in the Saudi context from the viewpoints of those who work in the field. The degree of importance of using educational technologies to develop gifted students' skills was generally very high. The study recommended finding alternatives to those difficulties preventing educational technology use in schools of gifted students in Jeddah.

Hence, this study responds to the worldwide calls to catch up with advances in education and contributes to the scarcity of relevant research in the local context at the gifted students' institutions. The study is helpful as it pinpoints salient barriers to employing educational technologies as an effective teaching method. The findings help the concerned authorities in the Ministry of Education identify the obstacles that talented students face when employing educational technologies in the educational process and research how to overcome them. The findings also contribute to improving the self-learning skill of the gifted student using modern technology by employing it fruitful.

Research Question:

The researcher used the following question to guide the existing inquiry. What are the obstacles to employing educational technologies in the educational process of gifted students from the students' point of view?

Scope of the Study:

The study is limited to describing the persistent obstacles in gifted students' schools for educational technology uses from the students' point of view during the first semester of the year 1443, corresponding to 2022. The study defined gifted students as students assessed with high scores by assessment centers of gifted institutions in Saudi Arabia. The study targeted secondary school students at Al-Faisaliah School for the Gifted in Jeddah. The term gifted students sometimes is used interchangeably with talented students.

2. Literature Review
Educational technology

Educational technology (ET) has been defined differently. For instance, [9] defined it as "various educational tools, materials, and methods that teachers use in education to transmit content or access to it. ET transfers the learner from abstract experience to the reality of tangible experience and helps in effective learning with less effort and sort time, at a cheaper cost in a bright atmosphere and a desire for better learning" (p.11). Similarly, the American Association for Educational Technologies refers to ET as organized stages of designing, applying, and evaluating the educational process with the purpose to achieve goals, serve human communication, employing human and non-human resources and making teaching more efficient less effort" [10].

The term hosts all devices, tools, applications and internet networks that gifted students use to achieve the lesson objectives, whether inside or outside the classroom. According to [11], ET refers to the "application of the principles and theories of learning in education. it is an organized interaction between the human element in the educational process, educational equipment and devices, and educational materials to achieve specific goals or solve educational problems" (p. 9). [12] and [13] refer to several innovations in educational technologies in the digital age, including mobile phones, augmented and virtual reality, interactive whiteboards, artificial intelligence, cognitive journeys, robot, interactive video, and online video conferencing.

A significant feature of educational technologies is the positive participation in technology-enabled tasks and interaction with it. It relates to individual differences in terms of age and levels. Additionally, it is easy to reach all students in different geographical locations [7]. The element of attraction is also an essential factor in education, taking into account its suitability to the learner's level and the school's environment and the lesson's objectives, supplementary and adjunct to the learning and teaching process [8].

Definitions and features of Gifted Students

The Ministry of Education in Saudi Arabia defined gifted students as "learners with extraordinary aptitudes and abilities or outstanding performance compared to the rest of their peers in one or more of the areas appreciated by society. These talented learners need special educational care that is not available in the Regular study curriculum" [13] p. 10). According to the assessment centers of gifted institutions in Saudi Arabia, where the Mawhiba system is applied in Jeddah, the present study refers to students with high scores as gifted students. [3] identified gifted students as students with extraordinary aptitude and abilities or performance; such qualities distinguish them from their peers, especially in mental excellence, innovative thinking, academic achievement, special skills, and abilities. The author argues that a gifted student is chosen according to particular scientific criteria and standards" (p. 5).

Researchers have tapped into the standard features of gifted learners that sort them apart from other ordinary learners. Many researchers have mentioned several characteristics of gifted and talented students. [1] mentioned a set of characteristics in their early learning, possession of verbal inventory and curiosity, the speed of learning and memorization, the strength of memory, and the accuracy of observation and high ability to think in new ways. [15] thought that the gifted person also possesses other characteristics: complex thinking, positive good sense, humor, high career ambitions, and self-awareness. On the physical level, the gifted are characterized by a better physical composition than ordinary students, whether in height, weight or growth. They are considered healthier than their ordinary peers [16].

3. Method

The study adopted the descriptive research approach to describe the phenomenon more accurately. The research population of this study included all gifted students at the secondary level in Jeddah (n= 220 students), Saudi Arabia. Out of this cohort of learners, a sample of 196 gifted students were singled out to take part to answer a questionnaire concerning the obstacles to using technology in their schools.

Data collection

A questionnaire, the data collection tool, was designed in light of [6] with some modifications to suit the purpose of the present study. The questions were designed on a five-point Likert scale wherein 5= very high, 4=high, 3=moderate, 2=low, 1=very low. The criteria for the decision on the response value are outlined in the following table.

Table 1. Criterion of Response Values

Means	Responses
1- 1.8	very low
2.6 - 1.81	low

3.4 -2.61	moderate
4.2- 3.41	high
5-4.21	very high

The reliability and validity of the tool were measured. The researcher ensured the validity of the research tool by calculating the validity of the internal consistency. verified by calculating the correlation coefficients between each items in the questionnaire and the total score for its dimension (see Table 2).

Table 2. Internal consistency of the Research Tool

Dimension 1		Dimension 2		Dimension 3	
Items	Correlation	Items	Correlation	items	Correlation
1	0.66	8	0.74	18	0.55
2	0.56	9	0.69	19	0.72
3	0.71	10	0.80	20	0.67
4	0.78	11	0.78	21	0.52
5	0.43	12	0.71	22	0.64
6	0.63	13	0.68	23	0.65
7	0.75	14	0.76	24	0.67
		15	0.80	25	0.58
		16	0.72	26	0.46
		17	0.80	27	0.60
				28	0.70
				29	0.59
				30	0.60

As data in the table indicates, all the questions in the first dimension had consistency at the statistically significant level (0.01) – the correlation coefficient ranged between (0.43, 0.78). Likewise, the correlation coefficient of the second dimension ranged between (0.68, 0.80) and that of the third dimension ranged between (0.46, 0.70). This indicates that the correlation of the items with the total score in all dimensions was very high, as the correlation coefficient for all items exceeded (0.05). That is to say. All items became statistically significant at the level (0.01), which indicates that the scale has a high degree of sincerity.

As for reliability, the researcher used two methods- Cronbach and split-half as outlined in Tables 2 and 3. The results of Table 2 indicate that the value of Cronbach for all items is high, as the coefficient for the first dimension was (0.78), the second (0.91) and the third (0.86). While the value of Cronbach of the tool as a whole is (0.84), it indicates that the resolution enjoys a high degree of stability, and this value was considered acceptable for using the survey.

Table 3. Results of Cronbach Test

Table 4. Results of the Split-Half

Dimensions	Statements	Spearman

Dimensions	Reliability Coefficient	
	items	Cronbach's alpha
Dimension 1	7	0.78
Dimension 2	10	0.91
Dimension 3	13	0.86
Whole Survey	30	0.84

	Singular	Paired	Brown's Correlation coefficient
Dimension 1	4	3	0.86
Dimension 2	5	5	0.92
Dimension 3	7	6	0.88
Entire Survey	15	15	0.91

In the case of the split-half, the items within each dimension were divided into two halves. The first half included the even statements. In contrast, the second half included odd statements. Then a correlation coefficient was calculated between the scores of individuals on the two halves according to the Spearman-Brown split-half equation. The results are displayed in the Table, indicating a ranging coefficient range from 0.86 to 0.91. This is considered a high value and an excellent indicator of the stability of the resolution.

Data Analysis

The researcher used the SPSS to answer the research question by using the following statistical procedures: standard deviation and means to find the values given by the participants in response to each item in the survey. The results are arranged in the following table with appropriate interpretation in light of the literature and previous studies.

4. Results and Discussion

This part outlines salient impediments to using educational technologies in gifted students' classes. The mean scores and standard deviations were obtained to outline the obstacles thwarted using educational technologies in schools for gifted students. The results are arranged in Table 4.

Table 4. Statistical Descriptions of Technology Use Obstructions in gifted Students' Schools

items	Statements	No.	Means	St.d	Response
26	The school building needs a department for educational technologies	1	3.91	1.24	high
18	I find it difficult to acquire some technologies because they are pricey.	2	3.24	1.28	moderate
21	The internet at school prevents me from using educational technologies	3	3.18	1.17	moderate
22	Preparing technology before the lesson prevents effective uses of it.	4	2.96	1.16	moderate
25	Teaching technology reduce my verbal interaction with my teachers.	5	2.93	1.30	moderate
23	My training in using educational techniques is limited	6	2.89	1.32	moderate
24	Educational technology takes more time than the class period.	7	2.76	1.32	moderate
29	Information about educational technologies is more than needed.	8	2.71	1.14	moderate
30	School learning resource centers are nonexistent.	9	2.46	1.41	low
20	I am not free to use educational technology.	10	2.36	1.27	low
27	My school does not have computers for learning.	11	2.35	1.51	low
19	I have difficulty in working with technology.	12	2.26	1.25	low
28	I think using educational technology is unimportant.	13	1.97	1.23	low
Overall Mean			2.76	0.782	moderate

The results outlined in the table indicate that the overall degree of obstacles to employing educational technologies was moderate. With thirteen obstacles in mind, the majority (8) came at a moderate level, five at a low rate and only one at a high level of obstruction. By calculating the general means 2.76, which is a moderate value, it is apparent that the preparation of a headquarters for educational technologies in the school building ranked first with an average of 3.91 and a high degree. This indicates that gifted students urgently need a suitable headquarters for educational technologies in the school, which contributes to overcoming their difficulties.

There is also an agreement among the participants' responses on their access to training on using technology or information about it or the negative aspects. The high prices or poor infrastructure, in general, occupied the average degree of obstacles. The results are consistent with [6] and [7] regarding the absence of computerized programs and lack of budget for buildings. In contrast, the results of this study varied from other studies regarding obstacles to employing technology, e.g., Al [17] Masoud (2021) and [18].

5. Conclusion

The results of the current paper generally indicated that the degree of obstacles to employing educational technologies in the educational process was moderate. Hence, the stud brings to the foreground some implications to reduce the difficulties gifted students face in employing educational technologies. They should be provided with electronic applications to promote their academic background. Last but also significant is developing school buildings for gifted students facilitate the use of educational technologies. Based on the findings, it is suggested to conduct similar research on talented female students in Jeddah or any other city in the kingdom. Future researchers may conduct similar studies using technological advances as variables in focus to explore new uncharted territories.

References

[1] Al-Shahrani, A. & Al-Qassas, K. (2020). The degree of practicing school activities and their relationship to school compatibility among gifted students in Bisha Governorate. *Journal of the College of Education, 36*(7), 243-269.

[2] Al-Darabkeh, M. (2021). Self-confidence and its relationship to achievement motivation among gifted and non-gifted students in the Hail region. *Al-Quds Open University Journal for Research and Educational and Psychological Studies,* 12(34), 1-13.

[3] Al-Farhoud, S. (2020). A proposed conception to solve the problems facing the implementation of gifted student care programs in Saudi Arabia. *Educational Journal for Adult Education, 2*(2), 92-111.

[4] Al-Zahrani, A. & Ali, A. (2020). Teaching methods used to develop creative thinking among gifted students in the Kingdom of Saudi Arabia from the point of view of their teachers. *Majma` Magazine*, 405-448.

[5] Al-Arji, F. (2020). The Reality of Apprenticeship Programs in Saudi Arabia. *Taif University Journal for Human Sciences, 6*(21), 595-624.

[6] Al-Salami, Y. (2014). The reality of using educational techniques in developing the skills of talented people in Jeddah from the point of view of field workers. *Journal of Arab Studies in Education and Psychology, 55*, 129-150.

[7] Al-Maliki, F. (2021). The reality of employing educational techniques in teaching English from the point of view of primary and middle school teachers in Sabya Governorate. T*he Arab Journal of Science and Research Publishing*, 5 (14), 1-27.

[8] Al-Otaibi, A. N.; Al-Hamidani, B. N.; Al-Mutairi, L.; Al-Adim, M. Y. & Al-Mutairi, H. M. (2021). The reality of employing educational techniques in teaching from the point of view of secondary school teachers in Hafr Al-Batin Governorate. *The Arab Journal of Specific Education, 5*(20), 291-320.

[9] Ali, K. & Sabira, F. (2015). The reality of using modern educational technologies and the difficulties they face in kindergarten: A field study on a sample of kindergartens in Lattakia. *Tishreen Journal of Research and Scientific, 37* (5).

[10] Farewell, Z., Fares, S., & Jassem, R. (2020). The reality of using modern educational technologies in the College of Education. *Al-Qadisiyah Journal for Human Sciences, 23* (4) 1-30.

[11] Saber, F. (2019). The reality of using educational techniques in teaching Islamic education from teachers' point of view. *Journal of Humanities and Applied Sciences*, 1-27

[12] Attar, A. & Kansara, E. (2021). *Modern educational technologies and their applications*. King Fahd National Library.

[13] Halfawi, W. (2018). *Developments of educational technology in the information age*. Dar Al-Fikr: Jordan

[14] Al-Farhan, Mubarak (2021). The extent of teachers' efficiency in using the behavioral trait assessment method as a method of detecting gifted students. *The Arab Journal of Disability and Gifted Sciences*, 413-452

[15] Buhais, R.; Al-Awdat, A. & Kanaan, E. (2020). The level of services provided to gifted students in Jordanian universities from the perspective of the students themselves.

[16] Al-Rabae, K. (2020). Factors affecting career choices among gifted students in King Abdullah II Schools for Excellence in Jordan. *Journal of the Islamic University of Educational and Psychological Studies, 28* (1), 282-

[17] Al Masoud, A. (2021). The reality of employing science teachers in the intermediate stage of educational techniques in teaching and the difficulties of employing them. *Journal of Educational Sciences*, 1-69.

[18] Akpan, C. (2014). ICT competence and lecturers' job efficacy in universities in Cross River State, Nigeria. *International Journal of Humanities and Social Science, 4*(10), 259-266.

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