

Gifted Students' Viewpoints on Using Educational Technology in their Schools in the Saudi Context

Abdullah Alammari†,

Umm Al-Qura University,
Faculty of Education,
Makkah, SA

Abstract

This paper explored gifted students' perspectives on using educational technologies in their schools in the Saudi context. Adopting a descriptive research approach, a questionnaire was used to collect information from a sample of 196 gifted secondary school students in Jeddah. Findings showed that educational technology was used to a high degree, with an overall mean of 3.74 and 4.06 for the degree of importance of technological usage. Based on the findings, the researcher forwards some recommendations for effectively using such technologies to promote gifted students' abilities and talents.

Keywords: Educational technology, Gifted Students, Educational process

1. Introduction

The development of educational technologies has noticeably become evident in recent decades, evidenced by the historical aspect of the stages it passed through. These stages were divided according to the following sequence: The first stage included audio tools, visual tools and audio-visual tools. The second stage relates to specific tools and means of illustration. The third stage is the stage of teaching aids, and the fourth stage is educational communication. The last stage is educational techniques [1].

Arguably, the progress and advancement of nations depend to a high degree on human efforts because they are considered the most critical resources with which these countries compete in the worldwide arena. Hence, paying attention to the gifted empowers them to handle more tasks for all professions and specializations [2].

There is an urgent need for appropriate programs for gifted students to touch upon their needs and learning styles and provide them full attention. Some of these programs are already in use, including the enrichment programs that increase different disciplines. Grouping and isolating the gifted from their peers is another program to separate them from others and place them with peers with similar characteristics. Moreover, academic acceleration enables talented students to move to higher grades at the speed that suits them. It enables them to excel [3].

The Kingdom of Saudi Arabia competes with the developed countries that focus on discovering gifted and

talented students, nurturing them and developing their skills. It comes within the sustainable development plans of the Kingdom's Vision 2030. The Ministry of Education has given this category of learners attention since 1995. It established a department for the gifted and talented students represented in the Department of Care for the gifted and the talented [4]. The educational policy in Saudi Arabia in 1969 stipulated multiple articles in its clauses that focus on the care of the gifted, namely Articles 57, 192, 193 and 194 [5].

Educational technology

Educational technology (ET) can be defined as the science of integrating materials and machines, presenting them to carry out and enhance education. It is based on educational tools and educational software [6]. Operationally, 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 [7], the term refers to the "application of learning principles and theories in education. Hence the term implies an organized interaction between the human element in the educational process, devices, and materials to achieve specific educational goals or solve educational problems" (p. 9). Undoubtedly, educational technologies enrich teaching and learning, accumulate learners' experiences, and globalize education through various communication methods that highlight the educational message attractively and interestingly [8]. Prior research has demonstrated how educational technologies meet the needs of many learners and raise their interests in learning [9]. such technologies contribute significantly to the effectiveness and positivity of learners and make it easier for teachers to fulfill their mission of facilitating teaching in general [1, 10].

The Digital explosion has solved many problems of traditional education. It provided a solution to the increase of students, the individual differences, and the lack of qualified teaching staff and financial capabilities [11]. It has become evidenced that educational technologies support learning methods to meet different conditions, enhance and develop understanding and remembering and increase the learner's verbal fluency [12]. The outcomes

Manuscript received May 5, 2022

Manuscript revised May 20, 2022

<https://doi.org/10.22937/IJCSNS.2022.22.5.34>

of these merits of technology improve the learner's quality of education, increase its effectiveness, and increase positivity towards learning [13].

[14, 15] 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.

[1]'s study (2021), among other studies, identified educational techniques in teaching English from the point of view of primary and middle school teachers in Sabya governorate. The researcher developed a questionnaire and distributed it to a sample of 110 female teachers. The study showed that the total score of results related to the availability and the use of educational technologies to teach English was below the expected level.

[11] is another important study that identified 122 female science teachers' uses of educational technology in teaching at the middle stage. The findings showed the difficulties of employing such technologies. The study generally showed that teachers in question used educational technologies to such a large extent, and the difficulties of employing educational technologies in teaching science appeared to a large extent.

Gifted and Talented Students

The Saudi Ministry of Education defines the concept of gifted students (sometimes called talented students) as students who possess extraordinary aptitudes and abilities or outstanding performance from the rest of their peers in one or more of the areas appreciated by society. They need special educational care that is not available in the regular study curriculum" [16, p. 10]. Departing from this definition, the present study aimed to explore students with high rates ensued from assessment centers of gifted institutions in Saudi Arabia. These learners are affiliates in one of the schools where the Mawhiba system is applied in Jeddah.

To [3], the gifted are students with extraordinary aptitude and abilities. These extraordinary abilities, including mental excellence, innovative thinking, academic achievement, and special skills, set the gifted students apart from the rest of their peers in one or more areas that society recognizes as distinct features.

Characteristics of the talented

Researchers have mentioned several characteristics of gifted and talented students, some of which are observed in the classroom [17]. At the top of such features are possession of verbal inventory and curiosity, the speed of learning and memorization, the strength of memory, accuracy of observation, and high ability to think in new ways [18]. The gifted also possess other characteristics: complex thinking, positive good sense, sense of humor, high career ambitions, and self-awareness [19].

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 better health than their ordinary peers [20].

[21] identified the uses of educational techniques in developing the skills of the talented in Jeddah from the point of view of workers in the field. The general arithmetic average of the degree of importance of using educational technologies in developing the skills of gifted people in Jeddah from the point of view of the study community at a degree (very high). The study recommended more attention to activating educational technologies in developing the skills of the gifted and finding alternatives to the difficulties that prevent practical uses in the given context.

The Present study

The present study builds of previous studies that delved into employing educational technologies to many advantages and recommendations that would facilitate the use of these techniques in the classroom and make it suitable for learning, such as arousing suspense, attracting attention and developing academic achievement [11, 22]. It also draws on recommendations emanated from some other previous studies that are foundational to the existing investigation.

The present study builds on previous studies that delved into educational technologies and recommendations that would facilitate using these techniques in the classroom and make them suitable for learning [11, 22]. It also draws on recommendations from other previous studies that are foundational to the existing investigation, particularly the study of [21].

Due to the scarcity of research that deals with educational techniques in the centers of gifted students in Saudi Arabia and addresses up-to-date technologies in education, the present study attempts to fill in the gap in the literature. The overriding two questions that guide this study are the following:

1. How do gifted students view the degree of using educational technologies in the educational process in their schools?
2. How do they view the importance of using educational technologies in the educational process in their schools?

The study encourages researchers to harness modern educational technologies. The study contributes to the research gaps in the educational field in gifted students' teaching and learning processes so that educational technologies in the educational field do not become an educational luxury. The results of this study increase the awareness of teachers and learners of the importance of employing educational techniques as an effective method of teaching and learning. The results also improve the self-learning skill of gifted students using modern technology

by employing it, saving effort and time for teachers and talented students, and facilitating their educational tasks.

2. Method

The study adopted the descriptive research paradigm to describe the phenomenon more accurately. The current research community consists of all talented students at the secondary level in the Kingdom of Saudi Arabia in Jeddah (n= 220 students). Out of this cohort of gifted learners, 196 gifted students were sampled to respond to a questionnaire designed in light of the study of [21] with some modifications to suit the purpose of the present study.

The participants replied to questions designed in a five-point Likert scale wherein 5=very high, 4=high, 3=moderate, 2=low, 1=very low. The criteria of decision on the response value is 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 checked prior to actual implementation. The initial form of the tool was presented to some faculty members who are experts in the field to obtain their feedback on the construction of the questionnaire and its appropriateness to the present study. Based on the feedback received from these experts, the researcher made some changes and alterations to the survey items. The internal consistency was confirmed by calculating the correlation coefficients between each item and the total score for the corresponding dimensions. All items in the first dimension had consistency statistically significant at the significance level (0.01). Its correlation coefficient ranged between (0.43 and 0.78). Similarly, the correlation coefficient of the second dimension ranged from 0.68 to 0.80, and that of the third dimension was between 0.46 and 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. All items became statistically significant at the level (0.01), indicating that the questionnaire has high consistency.

Cronbach's alpha was used to check the reliability coefficient. The Cronbach's alpha of the first dimension was (0.78), the second (0.91) and the third (0.86), and the value of Cronbach's alpha for the tool as a whole was 0.84, indicating a high degree of reliability and this value was considered acceptable for administrating the survey.

Data Analysis

The researcher used the SPSS to answer the research questions using the following statistical procedures: standard deviation and means of the participants' responses. In addition, Cronbach's alpha coefficient was used to check the internal consistency.

4. Results and Discussion

Extent of Using Educational Technologies in Gifted students' Classes

The means and standard deviations were calculated for each paragraph of the axis and the general means to answer the first question. The results are displayed in Table 2.

Table 2. Statistical Descriptions of Status Quo Technology Use in gifted Students' School

| item | Statements | No. | Means | Std. | Response |
|--------------|--|-----|-------|------|-----------|
| 5 | Youtube increases my scientific performance. | 1 | 4.41 | 0.87 | Very high |
| 2 | I send assignments to my teachers via emails. | 2 | 4.02 | 1.04 | high |
| 1 | Social networks enhances my learning materials. | 3 | 3.97 | 1.03 | high |
| 6 | Electronic games makes me enjoy learning | 4 | 3.77 | 1.22 | high |
| 3 | I exchange information with my classmates through virtual classes. | 5 | 3.52 | 1.30 | high |
| 4 | I find materials through augmented reality Apps. | 6 | 3.26 | 1.37 | moderate |
| 7 | I apply scientific experiments through simulation programs. | 7 | 3.23 | 1.31 | moderate |
| Overall Mean | | | 3.74 | 0.77 | high |

As Table 2 indicates, the degree of educational techniques was measured with relevance to seven aspects. As arranged in the table, the participants' responses showed that the uses in focus were four at a high rate, two at moderate and one at very high. The overall degree of use was considerably high (3.74). As indicated in Items No. 5, the participants had consistent responses that YouTube increased their scientific enrichment. This item ranked first as very high, with a mean value of 3.97, confirming the high awareness of talented students using

this technology to achieve their enrichment. The other four items came at a high rate, indicating a high awareness of this group of students' significance of such technological tools. The result of this study in this dimension agreed with the study of [11, 23]. At the same time, the results of this study contrasted with the findings of some other studies regarding the degree of use of technology such as [21]'s study which came to a medium degree and 1

Degree of Significance of Using Educational Technologies

The means and standard deviations were calculated for each paragraph of the axis. The general arithmetic means to answer the second question. The result are in Table 3.

Table 3. Statistical Descriptions of Significance of educational technology uses in gifted Students' Schools

| Items | Statements | No. | Means | Std. | Response |
|-------|--|-----|-------|------|-----------|
| 9 | Educational technology facilitate achieving the lesson objectives. | 1 | 4.29 | 0.82 | Very high |
| 12 | Educational technologies facilitates gifted students' learning. | 2 | 4.19 | 0.94 | high |
| 11 | Educational technologies increases my academic achievements. | 3 | 4.13 | .095 | high |
| 15 | I discover my skills through technology. | 4 | 4.12 | 0.96 | high |
| 14 | I think positively when I use educational technologies. | 5 | 4.11 | 0.99 | high |

Table 3 indicates that the importance of employing educational techniques was measured on ten statements. Responses arranged in the table show that the degree of significance was very high in one item (9) and high in all nine other items. The overall mean was 4.06, i.e., with a high degree. Clearly, Item 9 had a mean value of 4.29 - the highest among the other items. This indicates the awareness of gifted students that employing technology contributes significantly to achieving the objectives of lessons. The remaining items were also had high degrees, with mean values between 4.19 and 3.78. This also indicates the students in focus were aware of the importance of high educational technologies in increasing their suspense and positivity, improving achievement and distinguishing between each other. This dimension is at odd with the findings of [21] wherein the mean was "very high" regarding the importance of using the Internet among the sample.

5. Conclusion

This attempt looked into the status quo of technology in schools of the gifted students in Saudi Arabia. The findings show that the extent and significance of using educational technologies were highly considerable. The study highlights some points as recommendations and research venues based on the findings. It is vital to provide gifted students with electronic applications to

develop them academically. Perhaps, equipping school buildings with modern devices would promote using educational technologies at their schools. Other researchers may conduct similar research on gifted female students in Jeddah or other cities across the kingdom. Other topics include digging into developments of modern technologies that influence gifted students' performance. It would also be possible for other researchers in some other context beyond the Saudi context to conduct similar studies and compare their findings with the present study.

References

- [1] 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, 5 (14). *The Arab Journal of Science and Research Publishing*, 1-27.
- [2] 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] Jumaili, S. (2017). The extent to which Islamic education teachers use educational technologies in the basic upper stage and their attitudes towards them in Jordan, Al al-Bayt University, 1-96.
- [7] 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.
- [8] Calderwood, B. (2009). Learning Center Issues, Then and Now: An Interview with Frank Christ. *Journal of Developmental Education*, 32(3), 24-27.

- [9] Al-Janabi, O. & Al-Saadi, A. (2020). Educational techniques between reality and ambition (a comparative study), *Journal of Arts, University of Karbala*, 1-22.
- [10] Pandey, H. & Pande, P. (2014). Video conferencing: An Efficient E-Learning Tool for Distance Education. *International Journal of Innovation and Scientific Research 10*(2), pp.308-311.
- [11] 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.
- [12] Al-Anazi, A. (2018). The reality of educational techniques in teaching Arabic in Kuwait schools for the primary stage from the point of view of their teachers, Al al-Bayt University, 1-74.
- [13] Saleh, F. (2015). *The reality of using educational techniques by geography teachers in the primary and secondary stages from the point of view of its teachers and school principals and their attitudes towards it in Jordan* (MA thesis), Al al-Bayt University, 1-126.
- [14] Attar, A. & Kansara, E. (2021). *Modern educational technologies and their applications*. King Fahd National Library.
- [15] Halfawi, W. (2018). Developments of educational technology in the information age. 2nd floor, Jordan: Dar Al-Fikr
- [16] Al-Farhan, M. (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.
- [17] Momen, N. & Boucherida, S. (2020). The Role of Educational Care Programs in Meeting the Needs of Gifted and Talented Students. *Scientific Journal for Special Education*, 292), 262-236.
- [18] 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.
- [19] 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.
- [20] Al-Rabae, K. (2020). Factors affecting career choices among gifted students in King Abdullah II Schools for Excellence in Jordan, 28 (1). *Journal of the Islamic University of Educational and Psychological Studies*, 282-301.
- [21] 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." The sample that was used was: supervisors, teachers and school leaders.
- [22] 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, 5(20). *The Arab Journal of Specific Education*, 291-320.
- [23] 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.

Abdullah Alammari is an associate professor of information technology in e-learning; educational technology at Umm Al-Qura University, Faculty of Education, Makkah, Saudi Arabia