# Beginning of Distance E-Learning (Del) on Gender in Saudi Arabia

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**ABSTRACT:** In the beginning of Coronavirus(Covid-19) outbreak at the end of 2019, distance e-learning has prevailedafter the schools were closed. The present study aims to investigate distance e-learning among teachers and students through their access to distance e-learning, as well as factors that enhance e-learning in distance, such as electronic homework, virtual classrooms, chats, online content, and educational activities. The study's sample consisted of 14897 students and 1,545 teachers at 89 schools in Al Qunfudah city in Saudi Arabia, of which 53 were schools for girls, and 36 were schools for boys. A quantitative methodology was employed in deductive approach, and secondary data were analyzedusing R software to calculate t-test to found means, p-value, degree of freedom and also present the data in charts. The results show that male teachers and students have greater access to distance e-learning than female teachers and students but the study also found that there was no statistical significance between male and female students in the use of electronic homework and virtual classrooms. However, there is a statistical significance in that girls use more educational activities than boys.

**KEYWORDS:** Education, Distance e-learning, Saudi Arabia

## INTRODUCTION

The Kingdom of Saudi Arabia's Vision 2030, which sets out national transformation goals, is concerned with enhancing and developing distance e-learning processes for current and future generations, which includes providing citizens with e-learning resources to improve the quality and outcomes of learning. Consequently, The Ministry of Education of Saudi Arabia has encourageda move away from traditional teaching methods by providing schools with educational technologies that help to implement new methods of teaching through the use of information and communication technology (ICT)(MOE, 2019).

The MOE established Future Gate as a tool of distance e-learning to empower teachers in Saudi Arabia to become facilitators who monitor the learning process, which is a more modern approach to teaching students. This new approach is part of the government's Vision 2030, which aims to better prepare students for the labor market in the 21st century by teaching them the skills necessary to enter the labor market successfully. Therefore, The portal of Future Gate(FG) focuses on technology and connects all members of the educational process through activities such as online discussions, blogs, homework, and chats. The Saudi Arabian portal intends to enhance technological methods of learning, including blended learning, mobile learning, and flipped learning, while this new approach is predicted to result in ubiquitous learning. The present study investigates distance e-learning at the beginning of the pandemic of COVID-19, and the accessibility of both teachers and students, regardless the gender. It should be noted that all schools in Saudi Arabia are single-sex establishments. This research focuses on the following questions regarding distance e-learning:

1- What is the distribution of teacher access as a function of gender? Can a different statistical significance be observed between males and females?

2- What is the distribution of students' access as a function of gender? Can a different statistical significance be observed between boys and girls?

3- What is the distribution of e-homework as a function of gender? Can a different statistical significance be observed between males and females?

4- What is the distribution of educational activities as a function of gender? Can a different statistical significance be observed between males and females?

5- What is the distribution of the virtual classroom as a function of gender? Can a different statistical significance be observed between males and females?

## LITERATURE REVIEW

Distance e-learning refers to online learning using the internet wherein teachers are physically separated from learners. This type of learning emerged after e-learning was developed in 1999. The distance learning method was then enhanced by using the internet

**Beginning of Distance E-Learning (Del) on Gender in Saudi Arabia**

and technology to teach and learn. As stated by Arinto (2016), distance e-learning is a type of education that uses online or web platform for connecting students with educators.

Distance e-learning is used in Saudi schools as a modern kind of learning via e-learning and online learning to delivers the curriculums to learners which they and teachers physically separated. For such learning, the internet, and TV tools as necessary to act as a bridge between teachers and learners. Future gate and IEN that are under the supervision of the MoE in the kingdom of Saudi Arabia are two such major tools to present distance e-learning in the emergency after the pandemic of Coronavirus and the schools were closed. Consequently, distance e-learning through Future Gate (FG) has helped teachers, students and parents gain access to a platform where they can discuss the educational process with one another (Future Gate, 2019). This platform had given parents new opportunities to observe and become involved in how their sons and daughters learn. As an e-Learning system that contains many program applications used in the planning and implementation of other operations, the platform has enhanced asynchronous learning outside the classroom. In addition to interactive online discussion services, videoconferences, and forums, which allow students to learn outside the school walls. Moreover, communication between supervisors and teachers is enhanced through virtual meetings, which is designed to lead to improved teaching. It makes communication among students, teachers, and parents easier and the portal has built a bridge between all these important components to improve the learning process.

Chart 1 shows a study by Al Ohali et al. (2018), which compares five items of distance e-learning in three main cities in Saudi Arabia which are Dammam, Jeddah, and Riyadh. These items were: lessons created, tasks and activities, interactive content uploaded, discussion rooms, and virtual classrooms. Dammam city has the greatest activities, interactive contents, and discussion rooms than the other two cities.  On the other hand, the virtual classroom is the least item than the other four items, because students are still going to schools to study face to face in traditional classes.
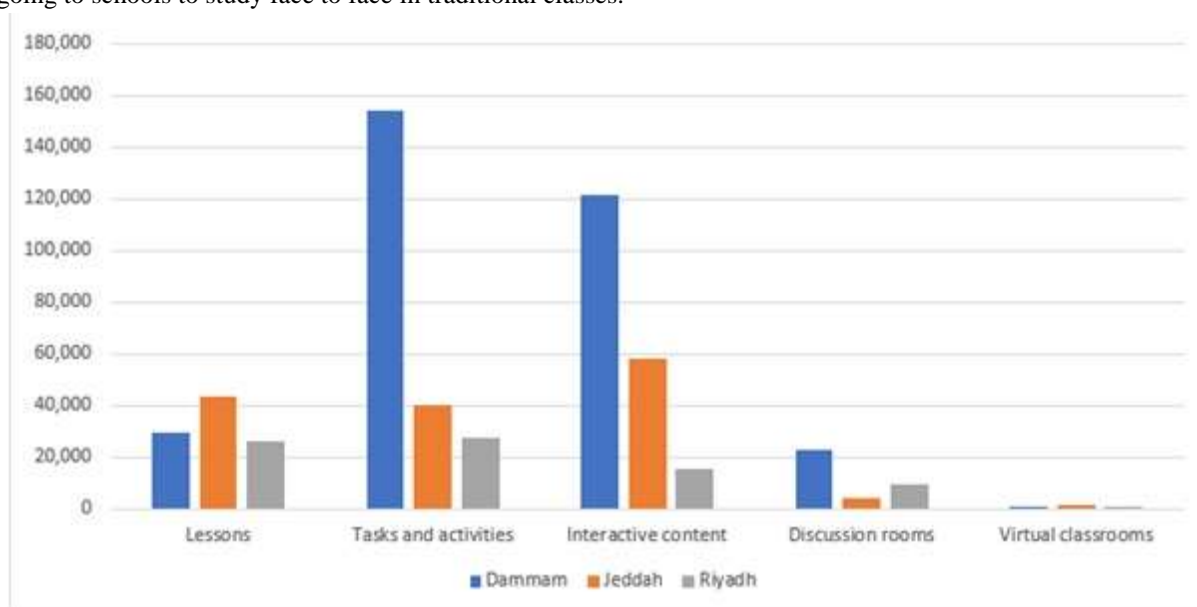


**Chart 1. Items of distance e-learningin three main cities in SA**

Many benefits of distance e-learning for society and the economy.  According to Alsaleh (2019), as an educational initiative project, distance e-learning promotes digital transformation in learning, which will lead to a technology-driven knowledge economy. This investment in technology can save time and money and enables users to acquire knowledge at any time. Moreover, implementing technology in teaching and learning can develop and encourage students' learning because they gain more experience, skills, and individual practice, while some of the things they learn can be reapplied to other school subjects.

In the same context, the other benefit of distance e-learning is facilitated communication among teachers, students, and parents. They alike tend to regard distance e-learning positively as it facilitates communication among all users of the service(Al-Ohali et al., 2019). However, in addition to the benefits of distance e-learning, there is also mention of some limitations, including the lack of teacher training and available devices for students and problems with good internet connections.

Snelling and Fingal (2020)indicated 10 strategies to enhance distance learning during the Coronavirus outbreak, which are "digital equity", "practice", "provide clear expectations to staffs and parents", "take time to plan", "establish daily schedules", "provide robust learning", "design independent learning", "address the emotional toll", and "chose the right tools and stick with them". From this point, the ministry of education in Saudi Arabia applied those strategies when the schools were stopped immediately at the starting of March 2020. Because of the lack of teachers' training to implementing distance e-learning for teaching their students, teaching, and learning a faced lot of problems to deliver the contents in the next semester in distance learning.

**Beginning of Distance E-Learning (Del) on Gender in Saudi Arabia**

## METHODS

The present study uses a quantitative research method, the data for which was obtained from an MoE branch in Al Qunfudah that is responsible for distance e-learning. In the same context, the current study is also located under research data, as it was conducted to understand and explain the use of distance e-learning portal and the differences between male and female schools in Saudi Arabia. It should be noted that this is secondary data and was collected by others, rather than by this study's researcher.

The sample of the current study consists of female and male schools and covers teachers and students in both types of schools. Table1 below shows the sample and number of schools involved in this study; the sample includes both male and female teachers and students from several boys' and girls' schools in Al Qunfudah. The current study covered the academic year 2019/2020 starting from September 2019 and ending in May 2020.

**Table 1: Teachers, students, and schools.**

| Gender | Number of schools | Students | Teachers |
|--------|-------------------|----------|----------|
| Female | 53 | 8012 | 843 |
| Male | 36 | 6885 | 702 |
| Total | 89 | 14897 | 1,545 |

The sample consisted of 89 schools in total, 53 girls' schools, and 36 boys' schools. There was a total number of1,545 teachers, 843 of whom were female and 702 male. Meanwhile, the overall number of students was 14,897, 8012 girls, and 6885 boys. The larger number of female schools meant that the numbers of female students and teachers were higher as a result.

## DATA ANALYSIS

The current study used secondary data as quantitative data, which are presented as numbers for comparisons of variables and are regularly arranged in tables, charts, figures, and other non-textual forms. There are various advantages concerning quantitative data, including a generalization of the results and reliable data due to statistical procedures, so it is considered a highly effective method for systematic and standardized comparisons.

The secondary data were analyzed using R software to help classify it into two categories: all-male schools and all-female schools. The process of analyzing the secondary data started when the Excel data was received in the Arabic language. Next, the contents had to be translated into English since R software cannot manipulate Arabic data. The final step involved manipulating the data using R to answer questions through p-value, mean, and t-test. P-value with 0.05 level of significance was used as the standard of measuring statistical significance, while the t-test is used to compare the mean between two independent samples (Tabachnick et al., 2019).Consequently, the t-test was particularly valuable in the present study, where it was used to compare the mean between males and females. Also, it illustrates the distribution of gender among the tested variables: access of teachers and students; the virtual classroom; electronic homework; educational activities.

## RESULTS

1. To answer the first question, *What is the distribution of teacher access as a function of gender? Can a different statistical significance be observed between males and females?:*
According to the t-test, the p-value = 0.003372, which means there is a statistical significance between teachers' gender. The t-test shows that the mean of male teachers is 19.2, whereas that of female teachers is 15.9 (see Table 2). It can thus be concluded that male teachers have greater access to Future Gate than female teachers.

**Table 2: Mean of male and female teachers' access**

| Gender | Mean |
|--------|------|
| Female | 15.9 |
| Male | 19.2 |

To visualize the answer to the first research question, Chart 2 shows that male teachers have greater access to distance e-learning portal than female teachers.

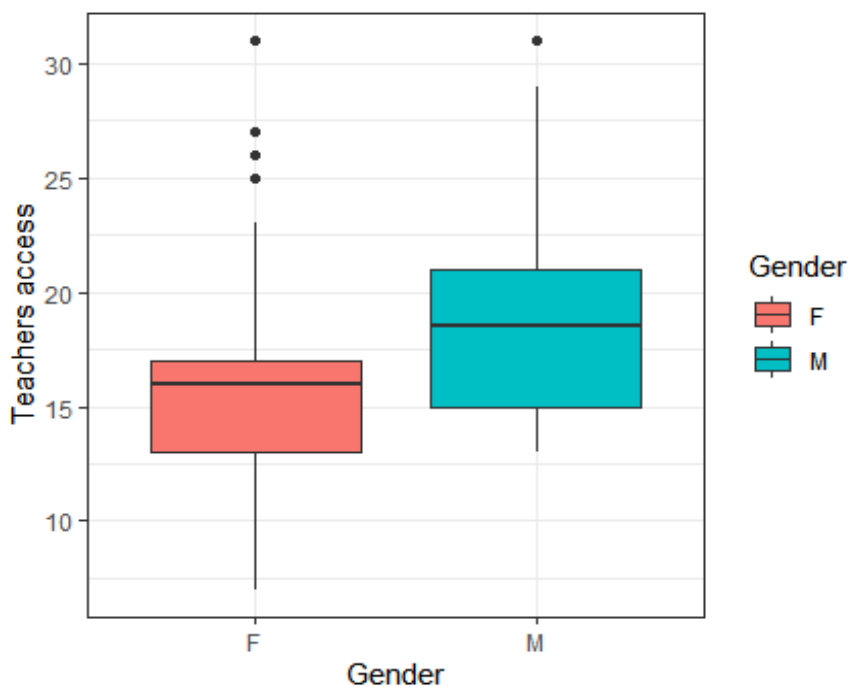**Beginning of Distance E-Learning (Del) on Gender in Saudi Arabia**



**Chart 2: Gender and teachers access**

2. To answer the second question, *What is the distribution of students' access as a function of gender? Can a different statistical significance be observed between boys and girls?:*
There is a slight difference between boys and girls in accessing distance e-learning for male students, as the mean of student boys is 180.25, which is more than girls (see Table3).

**Table3. Mean of boy and girl students' access**

| Gender | Mean |
|--------|----------|
| Girls  | 149.0943 |
| Boys   | 180.25   |

Despite the fact that t = 1.9388, and p-value = 0.05607, Chart3 illustrates greater access by boys than by girl students.
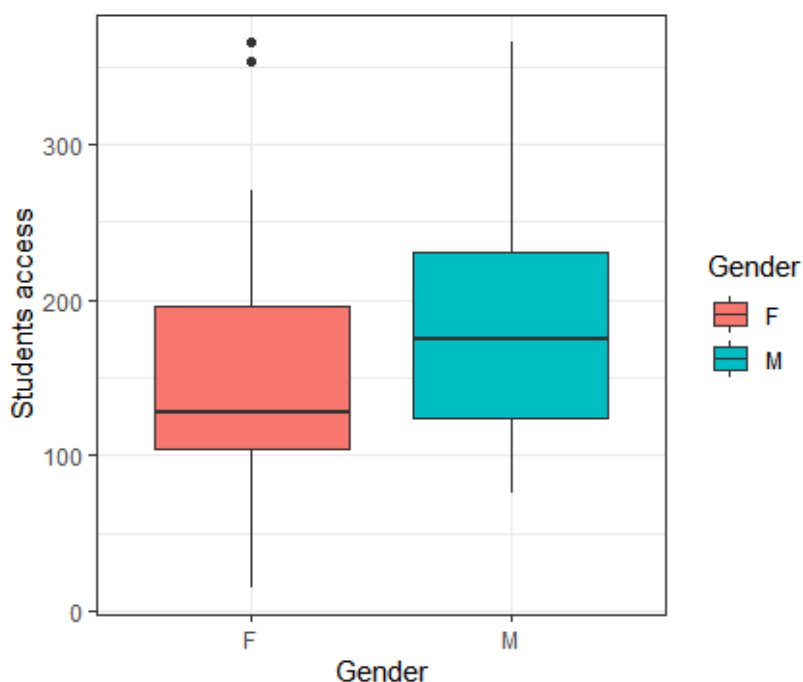


**Chart 3: Gender and students' access**

**Beginning of Distance E-Learning (Del) on Gender in Saudi Arabia**

3.  To answer the third question, *What is the distribution of e-homework as a function of gender? Can a different statistical significance be observed between males and females?*:

    It can also be seen that the mean is slightly different between males and females, with 251.277 and 241.0377 respectively, as shown in Table 4.However, the p-value can be used to answer the question more specifically about the lack of significance between male and female schools in terms of electronic homework.

**Table 4. Gender and electronic homework**

| Gender | Mean |
|--------|------|
| Female | 241.0377 |
| Male | 251.2778 |

However, the p-value = 0.6787 shows there is no statistical significance between male and female schools in e-homework. Chart 4 shows that equality exists between the two groups.
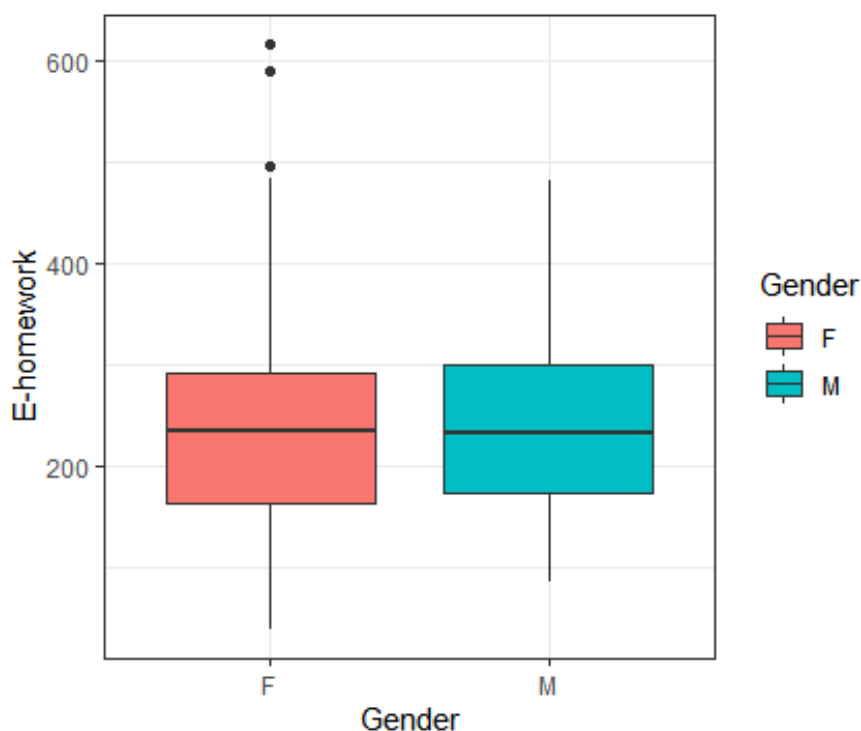


**Chart 4: Gender and e-homework**

4.  To answer the fourth question, *What is the distribution of educational activities as a function of gender? Can a different statistical significance be observed between males and females?*:

The findings show that for both genders, the total of the activities used was 11,708. According to Table 5, there is statistical significance between the use of educational activities by female schools and male schools because the mean of female schools is 151.264, compared to 102.527 for male schools.

**Table 5. Gender and educational activities**

| Gender | Mean |
|--------|------|
| Female | 151.2642 |
| Male | 102.5278 |

In the same context, educational activities were used more in girls' schools than boys' schools, as shown in Chart 5. Thus, there is a statistical significance between males and females using the educational activities that are available in Future Gate, with p-value = 0.01076. That means that girl students undertake more educational activities than boys.

**Beginning of Distance E-Learning (Del) on Gender in Saudi Arabia**
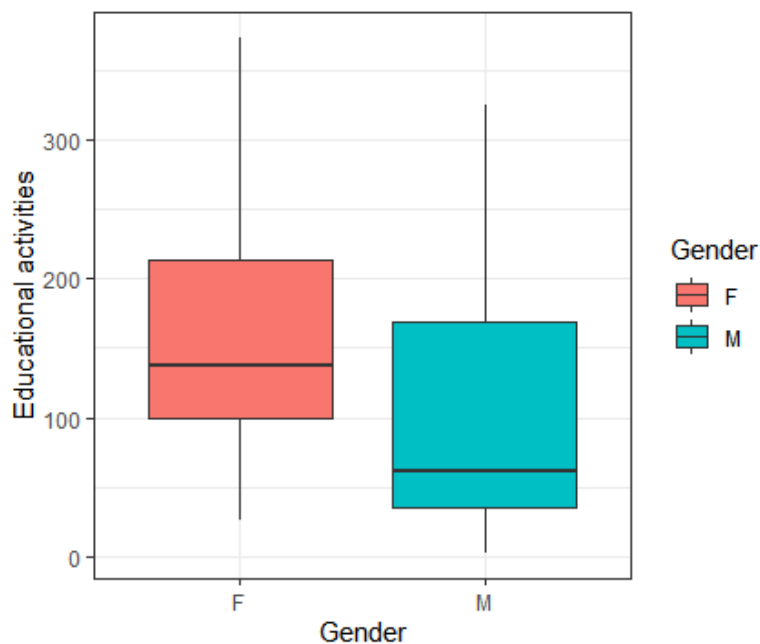


**Chart 5. Gender and educational activities**

5. To answer the fifth question, *What is the distribution of the virtual classroom as a function of gender? Can a different statistical significance be observed between males and females?*:

There is not a significant statistical distribution between boys and girls in terms of the virtual classroom, because p-value = 0.4885 , despite the mean of female and male which are 34.15 and 29.91 respectively (see table 6).

**Table 6. Gender and virtual classroom.**

| Gender | Mean |
|--------|-------|
| Female | 34.15 |
| Male | 29.91 |

Therefore, Chart6 shows that boys and girls have an equal number of virtual classrooms in the portal of Future Gate at distance e-learning.
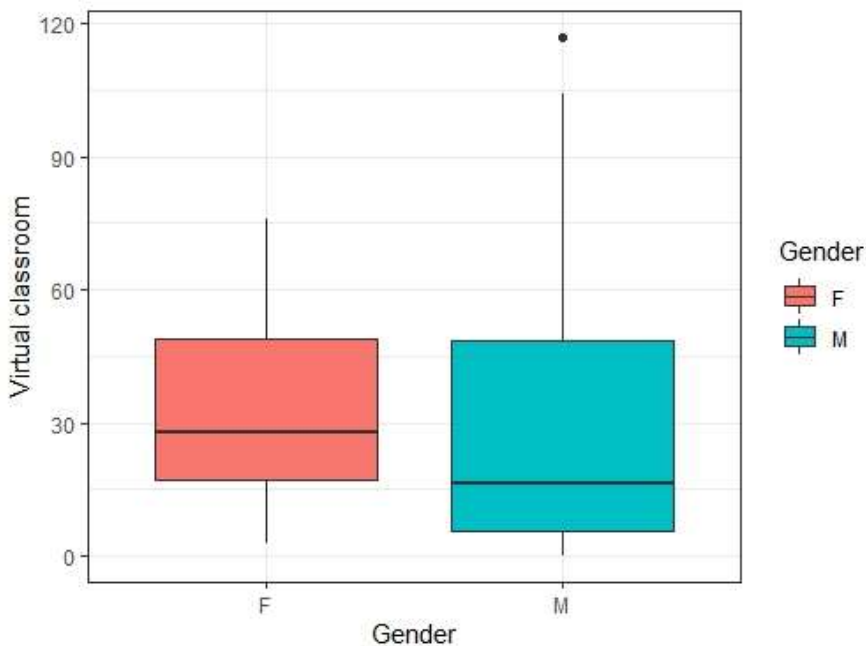


**Chart 6.Gender and virtual classroom**

**Beginning of Distance E-Learning (Del) on Gender in Saudi Arabia**

## DISCUSSION

Distance e-learning through portal of Future Gate in Saudi Arabia has proved highly attractive to students in terms of engaging them in digital learning. Although male teachers have greater access to distance e-learning than female teachers, the latter design more educational activities for girls than for boys. Consequently, these activities had a higher distribution for female students than for male students. In Al Qunfudah, 11,708 activities were created in the last year, which is fewer than the number of activities created in the cities that Al Ohali et al. (2018) investigated (see Chart 1).Therefore, distance e-learning consists of six categories, electronic homework; electronic content; discussion rooms, virtual classrooms; electronic tests; educational activities. All of those aspects need to be investigated and researched as they offer the user different things and research may change and evolve these categories as the project develops further. In the current study, there is equality between male and female students regarding electronic homework, while almost all students access the virtual classroom. However, educational activities have higher use in female schools than male schools; in contrast, teachers in male schools access the portal more than female teachers.

It has been established that distance e-learning through Future Gate has a major limitation which is that primary school students have not yet been allowed to participate in the portal. Also, The fact that the portal cannot provide class recordings(or recap) could be considered another limitation. .Meanwhile, as mentioned previously, a further limitation to date is that FG is only working for students who are studying at an intermediate or secondary level and primary schools do not currently have access. It should be noted that distance e-learning is a very recent project that only started in 2017, which means that only three studies on the subject have currently been published, all of which have been written in English and none in Arabic.

This study recommends that future research about distance e-learning should include and investigate the role of parents in the learning process through participation in the portal to mentor their children's learning process.

## CONCLUSION

Future Gate provides students and teachers with many tools to enhance ubiquitous learning, electronic homework; the virtual classroom; electronic tests, and educational activities. According to the findings of this study, the educational activities tool was used by more girl students than boys, despite male teachers having better access to them than female teachers. Two of the other tools that are used to enhance learning experiences are electronic homework and the virtual classroom, both of which were found to have equal use between male and female students. A possible limitation of the present study was that R software cannot identify data in the Arabic language because the program runs only in English coding, thus necessitating translation. Moreover, until the end of academic year 2019/2020, distance e-learning portal does not provide service for students at the primary stage of education. The study recommends that future research studies should investigate other factors in the portal, such as the influence of parents. In summary, implementing distance e-learning in Saudi Arabia has shifted learning toward a digital revolution, where bridges have been built among all factors that have a positive impact on the learning process; students, teachers, and parents. This shift to digital learning enables students and the others involved in the learning to process to enhance and acquire knowledge at any time.

## REFERENCES

1) Al Ohali, Y., Al Suhaibani, A., Palavitsinis, N. and Koutoumanos, A. (2018) Digital transformation of education in the Kingdom of Saudi Arabia: deploying a country-wide Learning Management System for K-12 education. In: *17th European Conference on e-Learning, Athens, Greece, 1-2 November 2018*. April, 1–2.

2) Alsaleh, B. A. (2019). K-12 Education Reforms in Saudi Arabia: Implications for Change Management and Leadership Education. In Teaching Educational Leadership in Muslim Countries (pp. 171-186). Springer, Singapore.

3) Al-Ohali, Y., Alhojailan, M., Palavitsinis, N., Najjar, J., Koutoumanos, A., and AlSuhaibani, A (2019) Human Factors in Digital Transformation of Education: Lessons Learned from the Future Gate at Saudi K-12. In: *International Conference on Applied Human Factors and Ergonomics*. Springer, 52–64.

4) Arinto, P. B. (2016). Issues and challenges in open and distance e-learning: Perspectives from the Philippines. International Review of Research in Open and Distributed Learning, 17(2), 162-180.

5) Education, M. (2019) [Online] Moe.gov.sa. Available from: https://www.moe.gov.sa:443/ar/Pages/default.aspx [Accessed 6 December 2019].

6) FUTURE GATE. (2019) [Online] Available from: https://fg.moe.gov.sa/ [Accessed 6 December 2019].

7) Snelling, J and Fingal, D (2020) ISTE: https://www.iste.org/explore/learning-during-covid-19/10-strategies-online-learning-during-coronavirus-outbreak. [Accessed 20 June 2020].

8) Tabachnick, B., Fidell, L. and Ullman, J. (2019) *Using multivariate statistics*. 7th edition, NY, NY: Pearson.