

# Students Agency in Distance Learning and its Impact on Educational Achievement during Covid-19 Pandemic amongst Female Secondary Students in Saudi Arabia.

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## Abstract

The outbreak of COVID-19 pandemic threatens the progress made in the field of education around the world through two major shocks, which are the near-global closure of schools at the level of all stages, and the economic recession caused by measures to combat the pandemic, and unless great efforts are made to confront these effects, the shock of school closures will cause learning losses, increased dropout rates, and increased inequality. The current study aims to measure the level of students' self-agency to increase educational outcomes in light of the trend towards DL. The study utilized a quantitative approach to treat the research problem and test hypotheses; a cross-sectional study used a questionnaire to collect data for investigating students agency in DL and its impact on educational achievement during the Covid-19 pandemic amongst female secondary students in Saudi Arabia. The findings of the current study revealed that using moral incentives to enhance the positive behaviour of female secondary school students leads to an improvement in their academic achievement. Besides, it showed that Planning to organize time effectively ensures self-learning to improve the academic achievement of female secondary school students. Furthermore, proper planning for self-learning leads to the development of academic achievement among female secondary school students. The students' realization of these concepts indicate that students have a high level of students agency and self-regulation learning skills. The results also showed that students have a good level of using distance learning applications (e.g., e-learning platforms). They have very good skills in using the internet to obtain knowledge and selecting proper methods for retrieving knowledge. Additionally, the majority of students have very good computer skills. This result contributes to the justification of the first result.

**Keywords:** Student Agency, Self-learning, E-learning, Covid-19, Saudi Arabia.

## المخلص

يهدد تفشي وباء COVID-19 التقدم المحرز في مجال التعليم حول العالم من خلال صدمتين رئيسيتين، وهما إغلاق المدارس شبه العالمي على مستوى جميع المراحل، والركود الاقتصادي الناجم عن تدابير مكافحة وباء، وما لم يتم بذل جهود كبيرة لمواجهة هذه الآثار، فإن صدمة إغلاق المدارس ستؤدي إلى خسائر في التعلم، وزيادة معدلات التسرب، وزيادة عدم المساواة. تهدف الدراسة الحالية إلى قياس مستوى الاعتماد الذاتي لدى الطالب لزيادة النتائج التعليمية في ضوء الاتجاه نحو التعلم الذاتي. اتبعت الدراسة المنهج الكمي لمعالجة مشكلة البحث واختبار الفرضيات. استخدمت دراسة مقطعية استبياناً لجمع البيانات لاستقصاء الاعتماد الذاتي لدى الطلاب وأثرها على التحصيل التعليمي خلال جائحة

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Covid-19 بين طالبات المرحلة الثانوية في المملكة العربية السعودية. أظهرت نتائج الدراسة الحالية أن استخدام الحوافز المعنوية لتعزيز السلوك الإيجابي لطالبات المرحلة الثانوية يؤدي إلى تحسن في تحصيلهن الأكاديمي. إلى جانب ذلك، أظهر أن التخطيط لتنظيم الوقت بشكل فعال يضمن التعلم الذاتي لتحسين التحصيل الأكاديمي لطالبات المرحلة الثانوية. علاوة على ذلك، يؤدي التخطيط السليم للتعلم الذاتي إلى تنمية التحصيل الدراسي لدى طالبات المرحلة الثانوية. يشير إدراك الطلاب لهذه المفاهيم إلى أن الطلاب يتمتعون بمستوى عالٍ من الاعتماد الذاتي ومهارات تعلم التنظيم الذاتي. أظهرت النتائج أيضًا أن الطلاب يتمتعون بمستوى جيد في استخدام تطبيقات التعلم عن بعد (مثل منصات التعلم الإلكتروني). لديهم مهارات جيدة جدًا في استخدام الإنترنت للحصول على المعرفة واختيار الأساليب المناسبة لاسترجاع المعرفة. بالإضافة إلى ذلك، يتمتع غالبية الطلاب بمهارات حاسوبية جيدة جدًا.

**الكلمات المفتاحية:** الاعتماد الذاتي ، التعلم الإلكتروني ، كوفيد-19 ، المملكة العربية السعودية.

## Background

The outbreak of COVID-19 pandemic threatens the progress made in the field of education around the world through two major shocks, which are the near-global closure of schools at the level of all stages, and the economic recession caused by measures to combat the pandemic, and unless great efforts are made to confront these effects, the shock of school closures will cause learning losses, increased dropout rates, and increased inequality (Bergdahl & Nouri, 2020).

Distance learning (DL) has played a pivotal role in addressing this crisis in educational institutions at the global level in general, as it enabled the educational process to continue during the period of the global health crisis due to the COVID-19 epidemic and the absence of other alternatives to education, and despite the difficulties that were known at the beginning of the total transition to distance education, however, DL showed its effectiveness through the completion of all academic courses and enabled final examinations to be conducted, and the smooth transition of academic years, without any obstacles (Mirhosseini et al, 2018), student's agency among fifth-grade students, as well as the results of the study (Tsai et al, 2020) that confirmed the effectiveness of student's agency by using distance education in providing learners with the necessary skills and increasing their motivation and motivation to learn. DL works to achieve educational outcomes and supports student's agency and continuous lifelong learning, but some students do not have sufficient aptitudes and capabilities for DL and student's agency, and in light of this the study problem arose about the extent to which students can student's agency to increase their educational attainment in light of the trend towards DL

Recently, there has been a great revolution in the field of information, which has changed many concepts. Perhaps the most important characteristic of this information revolution is the emergence of new technologies in processing and storing information, as

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well as the emergence of supercomputers and Internet networks, and as a result, the world has witnessed development in various educational fields, including the field of learning and education, The human being has enormous amounts of information that no individual can grasp, regardless of his abilities, and therefore attention began to focus on an active role for the learner, through which he can process and organize this information, and enable him to retrieve and understand it through the organization of learning and self-organization, and in order not to remain only a negative recipient of information (Mirhosseini et al, 2018).

A modern trend has arisen calling for the learner to plan to acquire knowledge by himself, and to determine what knowledge he needs, because with modern means of communication the student has access to a large number of knowledge and sciences and becomes able to identify the topics he needs, also the number of search engines increased, which make him access to the most important books and sources (Sai et al, 2020).

The importance of student's agency appears in its effective and basic function in the field of education, which is attributed to the fact that it helps to develop lifelong learning skills, which is one of the most important current educational goals, due to its focus on the personality of the learner as an active and effective participant in the learning process (Verstaevel et al, 2018), student's agency also contributes to achieve the desired quality of learning and increase the educational outcome (Akram & Ghani, 2019).

In light of the great trend of developing education, employing technologies in the educational process, and adopting DL, the world witnessed a momentous event that threatened education with a huge crisis that was perhaps the most dangerous during the twenty-first century, is the outbreak of the new COVID-19 virus, which imposed social distancing, as schools closed and the educational process was stopped. Countries have taken many measures and take steps and strategies to mitigate the impact of the spread of the epidemic on education, the most prominent of which is DL via distance or virtual classrooms (Bergdahl & Nouri, 2020).

The current study aims to measure the level of students' self-agency to increase educational outcomes in light of the trend towards DL. This aim will be achieved through approaching the following questions:

- What is the level of student agency, self-regulated learning, and growth mindset among high school students?
- What is the level of student agency among high school students in light of the trend towards DL?
- What are the obstacles to student's agency among high school students to student's agency in light of the trend towards DL?

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## Literature Review

Student agency, as defined in the OECD Learning Compass 2030, is based on the belief that students possess the capacity and willingness to constructively influence their own life and the society around them. Thus, student agency is defined as the capacity to select a goal, reflect, and act ethically to bring about change. It's about taking action rather than being acted upon; moulding rather than being moulded; and making responsible choices and decisions rather than accepting those made for one's self (OECD, 2019). When students engage as agents in their learning, that is, when they take an active role in determining what and how they will study, they demonstrate a higher level of motivation and are more likely to identify learning objectives. Additionally, these kids are more likely to have "learned how to learn" – a priceless skill that will serve them well throughout their lives. Agency can be employed in almost any circumstance: moral, social, economic, or artistic. For instance, students must develop moral agency to make judgments that take into account the rights and needs of others. While a strong sense of agency can assist individuals in achieving long-term objectives and overcoming adversity, students require core cognitive, social, and emotional abilities to use an agency to their – and society's – advantage (Klemenčič, 2015).

Due to the emergence of the Covid-19 epidemic, schools and universities throughout the world abruptly shifted away from face-to-face teaching and learning and toward distance teaching and learning. Distance learning (DL) transitioned rapidly and abruptly. There was no orientation or training provided to students or instructors regarding DL. Students and instructors began working remotely via Zoom, Microsoft Teams, Google Classroom, Google Meet, and WebEx, as well as a variety of Learning Management Systems such as Blackboard and Coursera. Instructors and students have varied perspectives on DL, with some being positive and beneficial and others being annoying and ineffectual.

Numerous studies have been conducted to determine the influence of Covid-19 on distance teaching and learning, as well as the obstacles experienced by students and instructors in DL. For example, the Association of Common Wealth Universities (2020) surveyed digital connectivity and engagement in Common Wealth universities and discovered that the most frequently cited challenges were accessibility for students (81%), staff training and confidence (79%) and connectivity costs (76%). Besides, 83% of respondents from high-income nations reported having broadband access, compared to 19% from low-income countries. Al-Nofaie (2020) offered a morphology class via Blackboard to Saudi English majors in Saudi Arabia during Covid-19. Students said that they preferred an asynchronous learning environment over an asynchronous learning environment due to its flexibility. Barriers to online learning included a lack of IT skills and facilities, domestic distractions, a lack of physical interaction, the inadequacy of Blackboard as a venue for tests, and students' uneasiness when taking exams via Blackboard. Unlike the study of Al-Nofaie (2020) discovered that live broadcasting with more teacher-student

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contact increased students' academic performance more than self-study recorded video teaching. Teachers should not only transfer knowledge online but also give good advice and communication. In another study, Guo (2020) organized optional synchronous online sessions during the regular class time for an introductory calculus-based physics subject, which was attended by around half of the students. The results indicated that students who attended the synchronous sessions saw a 3.5 per cent decrease in their exam scores, while those who did not attend saw a 14.5 per cent decrease in their test scores. Students who participated in synchronous sessions demonstrated a greater gain on the pretest and posttest than students who did not (56 per cent versus 43 per cent). Students who did not participate in the synchronous sessions regarded the course as more challenging and required more study time than those who did. The study advised that future online classes require students to attend and participate synchronously.

Teachers in Turkey attacked the consistent curriculum, teacher-centred traditional instruction, and DL sources and materials. The teachers lacked proper DL training. They lacked social skills, were uncreative, and were incapable of utilizing interactive resources. There were insufficient resources and materials suitable for DL. Students favoured face-to-face live courses, technology-assisted education, enhanced material, more communication between students and instructors, and motivational activities (Koçoglu and Tekdal, 2020).

Doreleyers and Knighton (2020) analyzed data from 100,000 postsecondary students in Canada and discovered that 26% of students had at least one course postponed or cancelled owing to Covid-19. 7% reported being unable to complete any or all of their courses. Students expressed concerns about their academic futures, including grades, their ability to complete their credentials on time, and the possibility that their certification would not be equivalent to those unaffected by Covid-19.

A recurring difficulty identified in the preceding research is a lack of student participation, communication, and contact with classmates and instructors in the DL setting during Covid-19. The engagement of students is critical to the teaching-learning process. Agency as a component of engagement is critical for understanding how students truly engage in learning activities. It empowers students to take ownership of their learning by leveraging the tools and affordances available in the learning environment. Student agency is critical for academic performance, particularly in the DL environment in a world facing Covid-19. Agency can help alleviate the discomfort associated with DL, and fostering students' agency helps their engagement, learning, as well as their social and emotional well-being. It has a significant effect on their self-efficacy, sense of self, identity, motivation, and metacognition. Improvements in these four constructs result in increased agentic involvement (Xiao, 2014).

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## Methods and Procedures

The study relies on a quantitative approach to treat the research problem and test hypotheses; a cross-sectional study used a questionnaire to collect data for investigating students agency in DL and its impact on educational achievement during the Covid-19 pandemic amongst female secondary students in Saudi Arabia.

### Data Collection Method

The survey responses were collected based on Google Forms where a link was provided for 3 weeks, and the link was sent to the respondents based on the email registered to female students in cooperation with the management of targeted secondary schools in Saudi Arabia.

### Sampling

The population of the study included female secondary students in Saudi Arabia. The study sample was selected using the random sampling method. With the need to represent all demographic variables for study, including (Gender Educational Qualification – Years of Experience).

### Hypothesis Development

In light of the research questions, the following main hypothesis was formulated:

There are statistically significant differences at the level of significance ( $0.05 \geq (\alpha)$ ) in the level of students' agency and self-reliance to increase the educational outcome in light of the trend towards e-learning due to the variable (rate, specialization, educational region).

## Data Analysis and Results

### Descriptive Analysis of Data

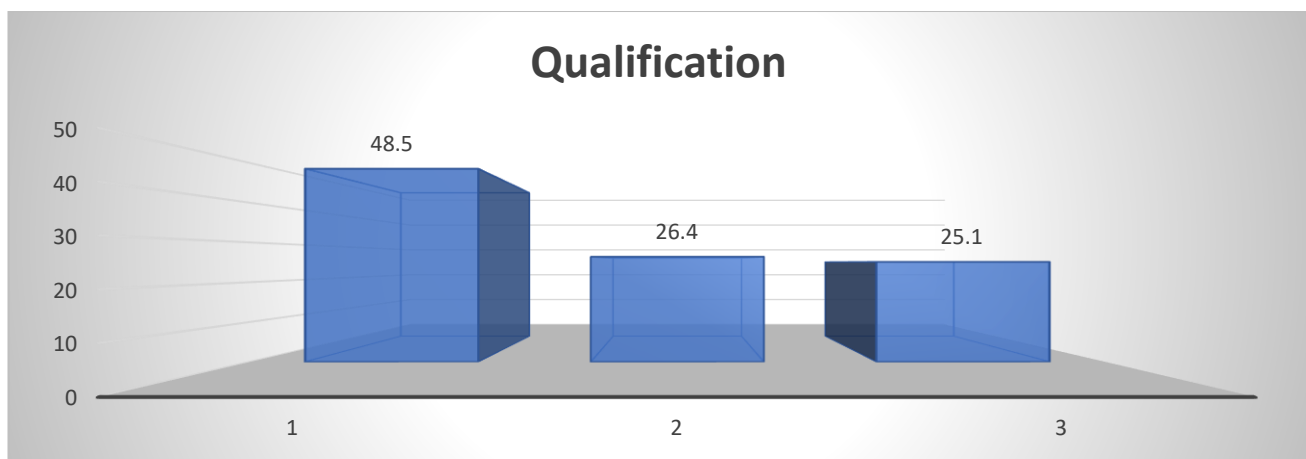
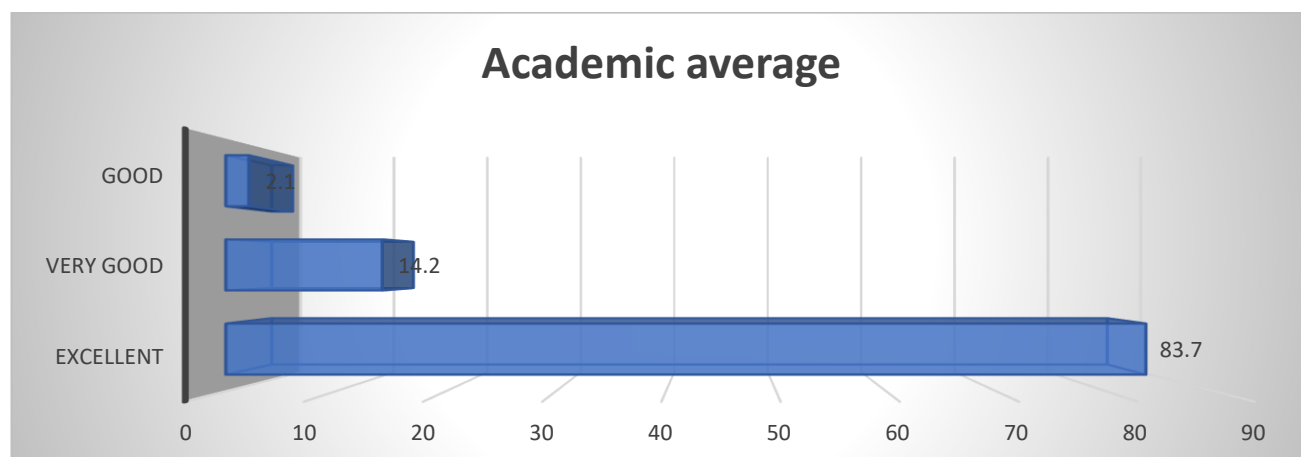


Chart 1: The participants' distribution according to Qualification.

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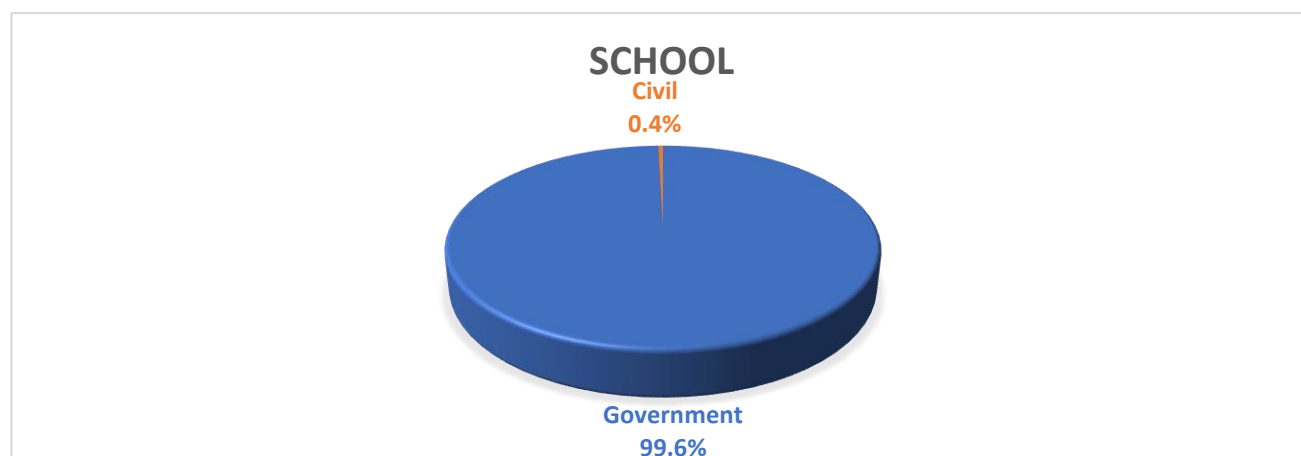


The results (Chart 1) indicated that 48.5% of the sample chose the scientific stream, while 26.4% chose the literary stream, while 25.1% chose other streams i.e., religious, commercial etc.



**Chart 2: The participants' distribution according to Academic average.**

Chart (2) indicates that the majority of the respondents (83.7%) have excellent academic averages, while 14.2%



**Chart 3: the participants' distribution according to School.**

The majority of the participants study at government schools (99.6%).

**The following are the analysis of study findings according to the research questions.**

- 1. What is the level of student agency, self-regulated learning, and growth mindset among high school students?**

Table (1) shows the descriptive measurements of items of the first domain "The academic achievement level of female secondary school students", whereas the table has ( 7 ) items, the item which comes first based on the relative importance index is "The use of moral incentives to enhance the positive behavior of female secondary school students leads to an improvement in their academic achievement" with (M = ٤,٥٣ out of 5, RII = ٩٠, 7%, SD =

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، ٧٧). This result indicates a very high degree of approval, the item which comes last based on the relative importance index " Assigning female students to electronic tasks and assignments that interest them is a way to reduce their low level of academic achievement" with (M = ٣,٧٧ out of 5, RII = ٧٥,٤%, SD = ١,١٧) This result indicates a high degree of approval.

The total degree of the first domain "The academic achievement level of female secondary school students" was medium with (M = 4.12 out of 5, RII = 82.4%, SD = 0.64).

**Table 1: Descriptive measurements of items of the first domain.**

No.	Item	M	SD	RII	LA	R
1.	Proper planning for self-learning leads to the development of academic achievement among female secondary school students	4.24	0.81	84.8%	V. High	3
2.	Planning to organize time effectively ensures self-learning to improve the academic achievement of female secondary school students	4.33	0.81	86.6%	V. High	2
3.	Plans are developed to assess female secondary school students within the self-learning process to increase their academic achievement performance	4.05	0.94	81.0%	High	4
4.	Assigning female students to electronic tasks and assignments that interest them is a way to reduce their low level of academic achievement	3.77	1.16	75.4%	High	6
5.	E-learning activities are planned in a way that helps in achieving the goals and developing the academic achievement of female secondary school students.	3.80	1.05	76.0%	High	5
6.	The use of moral incentives to enhance the positive behaviour of female secondary school students leads to an improvement in their academic achievement	4.53	0.72	90.6%	V. High	1
<b>All items</b>		<b>4.12</b>	<b>0.64</b>	<b>82.4%</b>	<b>High</b>	

Hint: M=Mean of answers, RII=Relative Importance Index ((Mean/5) \*100%), SD=Standard Deviation., LA= Level of agreement, R=Rank.

## 2. What is the level of student agency among high school students in light of the trend towards e-learning?

Table (2) shows the descriptive measurements of items of the second domain " The level of self-learning application among female secondary school students in light of the trend towards e-learning", whereas the table has (10) items, the item which comes first based on the relative importance index is " I use the Internet to obtain knowledge" with (M = 4.4 out of 5, RII = 88%, SD = 0.76), This result indicates vary the high degree of approval, the

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item which comes last based on the relative importance index " I subscribe to online learning groups to share information and knowledge" with (M = 3.72 out of 5, RII = 74.4%, SD = 1.11) This result indicates a high degree of approval.

The total degree of the second domain " The level of self-learning application among female secondary school students in light of the trend towards e-learning" was medium with (M = 4.01 out of 5, RII = 80.2%, SD = 0.62).

**Table 2: Descriptive measurements of items of the second domain.**

No.	Item	M	SD	RII	LA	R
1.	I can deal with the computer	4.13	0.87	82.6%	High	3
2.	I make use of e-mail to exchange knowledge	3.75	1.08	75.0%	High	8
3.	I choose what suits me of knowledge and skills	4.30	0.69	86.0%	V. High	2
4.	I use the Internet to obtain knowledge	4.40	0.76	88.0%	V. High	1
5.	I have a variety of means to store information	4.06	0.79	81.2%	High	5
6.	I subscribe to online learning groups to share information and knowledge	3.72	1.11	74.4%	High	10
7.	I know the websites of libraries and educational platforms	4.08	0.91	81.6%	High	4
8.	I can deal with computerized scientific programs	3.97	0.90	79.4%	High	7
9.	I subscribe to educational sites to receive all new	3.75	1.08	75.0%	High	8
10.	I show what I have learned to my teacher for guidance	3.98	0.95	79.6%	High	6
<b>All items</b>		<b>4.01</b>	<b>0.62</b>	<b>80.2%</b>	<b>High</b>	

Hint: M=Mean of answers, RII=Relative Importance Index ((Mean/5) \*100%), SD=Standard Deviation., LA= Level of agreement, R=Rank.

### 3. What are the obstacles to self-learning among high school students to self-learning in light of the trend towards e-learning?

Table (3) shows the descriptive measurements of items of the third domain " Obstacles to self-learning among female secondary school students for self-learning in light of the trend towards e-learning", whereas the table has (9) items, the item which comes first based on the relative importance index is " Loss of desire and extinguishment of passion for learning, which makes it boring when learning" with (M = 3.92 out of 5, RII = 78.4%, SD = 1.17), This result indicates a high degree of approval, the item which comes last based on the relative importance index " The difficulty of providing electronic tools and means to achieve self-learning" with (M = 2.64 out of 5, RII = 52.8%, SD = 1.29) This result indicates a medium degree of approval.

The total degree of the third domain " Obstacles to self-learning among female secondary school students for self-learning in light of the trend towards e-learning" was medium with (M = 3.13 out of 5, RII = 62.6%, SD = 0.81).

**Table 3: Descriptive measurements of items of the third domain.**

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No.	Item	M	SD	RII	LA	R
1.	Self-learning distracts the mind between sources of knowledge	3.42	1.20	68.4%	High	3
2.	High school leaders provide creative proposals	3.70	1.00	74.0%	High	2
3.	Loss of desire and extinguishment of passion for learning, which makes it boring when learning	3.92	1.17	78.4%	High	1
4.	I cannot organize time for self-learning	3.07	1.21	61.4%	Medium	4
5.	Lack of an educational environment suitable for self-learning	2.89	1.30	57.8%	Medium	5
6.	The difficulty of providing electronic tools and means to achieve self-learning	2.64	1.29	52.8%	Medium	9
7.	Self-learning programs are not compatible with my academic achievement capabilities	2.79	1.21	55.8%	Medium	8
8.	Lack of necessary educational aids, private rooms equipped with machines, equipment, and libraries necessary for self-learning	2.87	1.25	57.4%	Medium	7
9.	Self-learning makes me feel isolated and lonely	2.88	1.40	57.6%	Medium	6
<b>All items</b>		<b>3.13</b>	<b>0.81</b>	<b>62.6%</b>	<b>Medium</b>	

Hint: M=Mean of answers, RII=Relative Importance Index ((Mean/5) \*100%), SD=Standard Deviation., LA= Level of agreement, R=Rank.

### Hypothesis Testing

To test the differences in the level of students' self-reliance to increase the educational outcome in light of the trend towards e-learning due to the variable (rate, specialization). We used the One-Way ANOVA test was used as follows:

**Table 4: Differences by Qualification**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.216	2	.108	.563	.570
Within Groups	45.173	236	.191		
Total	45.388	238			

There is no statistical difference ( $p\text{-value} > 0.05$ ) in the level of students' self-reliance to increase the educational outcome in light of the trend towards e-learning due to Qualification.

**Table 9: Differences by Academic average**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.332	2	.166	.870	.420
Within Groups	45.056	236	.191		
Total	45.388	238			

There is no statistical difference ( $p\text{-value} > 0.05$ ) in the level of students' self-reliance to increase the educational outcome in light of the trend towards e-learning due to *Academic average*.

## Discussion

The findings of the current study revealed that using moral incentives to enhance the positive behaviour of female secondary school students leads to an improvement in their academic achievement. Besides, it showed that Planning to organize time effectively ensures self-learning to improve the academic achievement of female secondary school students. Furthermore, proper planning for self-learning leads to the development of academic achievement among female secondary school students. The students' realization of these concepts indicate that students have a high level of students agency and self-regulation learning skills.

The results also showed that students have a good level of using distance learning applications (e.g., e-learning platforms). They have very good skills in using the internet to obtain knowledge and selecting proper methods for retrieving knowledge. Additionally, the majority of students have very good computer skills. This result contributes to the justification of the first result.

In terms of the obstacles to students agency during the Covid-19 pandemic, the results showed that the loss of desire and extinguishment of passion for learning makes it boring for students when learning. Besides, some students believed that self-learning distracts the mind between sources of knowledge. Thus, there is a need to provide some training for the students to improve their skills in finding and retrieving information.

Educators cannot agree on a definition of student agency. Agency is, in general, the polar opposite of helplessness. It is a component of individualized education. It is the capacity to conduct deliberate action. It empowers students by giving them a voice and a choice in how they learn. Perseverance is required, as are reflective and self-discipline qualities. When students have agency, they set objectives, plan, take action toward those goals, reflect on their progress, and refocus their efforts in response to criticism from peers and instructors. They are capable of managing their education and taking an active role in acquiring and internalizing new knowledge. They learn through meaningful and relevant activities that are motivated and launched by their interests and guided by their teachers. They select from options such as projects and assignments that are made available to them. By encouraging students to take the initiative, instructors help students develop their cognitive ability to take charge, boost their enthusiasm, and ensure positive involvement in activities. Academic performance and achievement are significantly impacted by students' agency. It teaches students to be self-assured, adaptable, and socially responsible, as well as to find meaning and fulfilment in their life. It is critical for self-regulated learning. It equips individuals with the ability to direct their route toward mastery of learning and to confront new obstacles. (Luo, et al., 2019).



The current study's findings of the barriers faced by students are consistent with those of Koçoglu and Tekdal (2020), who found that Turkish teachers lacked online teaching competency, were unsociable and uncreative, were unable to use interactive materials, and needed proper DL training. DL lacked adequate resources and materials. Students favoured face-to-face live courses, technology-assisted education, enhanced content instruction, communication between educational components, and motivational activities.

In contrast to Chung, Subramaniam, and Dass's (2020) study, pupils in this research demonstrated a high level of agency. By contrast, the findings of this study corroborate those of Guo (2020), who reported that students who did not attend synchronous sessions found their courses more difficult and required more time to study the material, whereas students in the current study found online learning to be beneficial and interesting. The findings are consistent with those of a study conducted in Greece by Karalis and Raikou (2020), which found that while participation in online classrooms was high, there were issues with attendance and involvement in that study, as well as a high number of students who missed their online classes.

Lack of engagement, interaction, and communication were all common problems in DL during the Covid-19 pandemic, as documented in Baber's (2020) studies in India and South Korea, Adnan and Anwar's (2020) studies in Pakistan, Karalis and Raikou's (2020) studies in Greece, AlNofaie's (2020) studies in Saudi Arabia, and the current study as well. Wolverton, Guidry Hollier, and Lanier (2020) demonstrated that students' perceptions of computer self-efficacy contributed to student engagement and that student engagement has an effect on group satisfaction in online business courses.

## **Conclusion and Implications**

The questionnaire-survey responses in this study about DL during the Covid-19 pandemic revealed that students have a high level of student agency, self-regulated learning, and growth attitude. Additionally, findings indicated a high level of proficiency with e-learning platforms. Instructors and students alike require instructional and technical orientation, as well as DL training and assistance, to further develop students' agency in DL. Competent teachers in information technology and remote education may provide brief synchronous or asynchronous training sessions to assist people who are less proficient and to address their concerns about online instruction. Instructors may augment the DL platform with additional communication tools, such as WhatsApp, Telegram, or Facebook. Assessing students' and instructors' changes in experiences, expectations, new trends, and lessons gained in DL following the outbreak of Covid-19 is a topic for future academics to investigate

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