

**REMOTE LEARNING AND ITS EFFECTS ON THE CRITICAL THINKING ABILITIES OF LEARNERS IN OMAN****Ms. Khaloud Al Makhroumi**

University of Technology and Applied Sciences, Ibri, Oman

**Dr. Virendra Gawande**

Oman College of Management and Technology, Oman

**Ms. Huda Al Badi**

University of Technology and Applied Sciences, Ibri, Oman

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**ABSTRACT**

Online instruction has become very common and is being very frequently adopted during an unfavorable circumstance like, bad weather conditions or sometimes spanning the instruction over larger geographic distances. In online learning, the most common concern is whether it is as effective as face-to-face learning? Students in Oman Higher Education Institutions were asked to rate their online learning experiences and to identify the factors that influenced their critical thinking abilities during the pandemic phase. The results of this research, that included the survey of answers from 130 university students in Oman, revealed that the vast majority of respondents were unsatisfied with their online learning experiences.

**Keywords:**

Remote Learning, Critical thinking, Learning environment.

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**1. INTRODUCTION**

The global lockdowns, enforced by governments in many countries during the COVID-19 pandemic in 2019-2020, has significantly influenced all areas of work and social activities. Additionally, the traditional higher education institutions were required to make the transition overnight from face-to-face, to a fully online teaching methodology. This required a significant revision of the basic teaching and evaluation methods and resources.

In addition to affecting the higher education landscape, this disruption also significantly influenced students' educational experiences [1]. It was necessary to use "emergency eLearning" [2], since standard teaching and learning methods were no longer possible. Traditional institutions were pushed into direct competition with remote Learning education, despite the lack of necessary pre-existing infrastructure environment or related needs to cope with the new teaching environment [1].

In many situations, academic faculty were forced to modify their instructional materials to offer content for online delivery without the requisite training or assistance [3]. The adjustments imposed by the pandemic were equally difficult for instructors, as well as for students, who has to not only transfer to a new form of learning but also struggle with a number of additional unexpected circumstances that were influencing their learning experiences [1]. Some students, for example, found it difficult, if not impossible, to study at home, which may be a reflection of their socioeconomic condition [1]. Additionally, some students faced difficulty in accessing study materials since they didn't had connection to the internet or enough bandwidth. This negatively affected the learning experiences of students [4].

Although several researches have been addressed on equality concerns in remote Learning during the pandemic (e.g. [5][6][7]), more emphasis should have been made to the effectiveness of remote Learning during the pandemic.

This research intends to investigate Oman's higher education students' remote Learning experiences and its efficacy during the pandemic, with a prime focus on students' critical thinking abilities. Furthermore, by analyzing the data acquired from the online survey distributed to 130 students at higher education institutions in Oman, this study emphasized on the following three specifics.

1. Students' perception of remote learning.
2. Effect of remote learning on the critical thinking abilities of students.
3. Factors which have influenced student engagement and critical thinking.

## 2. Research Objectives

Following are the three main objectives of this research:

1. To study the students' perception of remote learning.
2. To study the effect of remote learning on the critical thinking abilities of students.
3. To assess what factors have influenced student engagement and critical thinking.

## 3. Literature Review

### 3.1 Remote Learning

The universal adoption and accessibility of the Internet technologies indicates that remote learning eliminates barriers to time, distance, and cultural background while enabling individuals to take a larger role in their continuous learning [8]. Students may get benefitted from a wide range of experts and resources that otherwise are not available locally. The possible benefits of remote learning includes value, performance, cost-effectiveness, and learner's satisfaction. These have been examined in studies contrasting remote learning with conventional teaching methods; more knowledge, skills, and attitudes than traditional methods gained by learners [9].

Remote learning makes it easy for distantly located individuals with similar objectives, opinions, and perceptions to make new collaborations. It also assists to establish social connections among individuals who are otherwise tactful, closed, or shy [10]. Easier transmission of skills is possible with the use improved technologies, especially among young people. Other advantages of remote learning includes, flexibility, usability, satisfaction, and cost-effectiveness [11].

Remote learning may also have a range of drawbacks. The interface layouts' opacity may make it more difficult to know about different technical issues and set up a learning network, in particular, a curriculum for older participants [12]. There is also a lack of direct communication facility, the "face-to-face" interaction.

It seems to be extremely crucial from social science students' perspective, where acquiring the information and communication skills is essential. One of the major drawbacks would be that the participants may not be able to have a social and a real business experience. It would be just the knowledge acquired in lectures, conferences, and seminars. Students read the papers, listen to the lessons, listen to the classes, observe and experience these scenarios, and gain experience [13].

### 3.2 Remote Learning & Critical thinking skills:

Development trends in the twenty-first century have significant technological changes that requires the acquisition of new skills such as critical thinking skills. As a result of the decline in regular and manual work and the growth in complicated workforces that need expert thinking in education to equip students with the skills required [14].

Additionally, students must learn how to think critically and solve complicated problems in order to succeed in the employment market of the 21st century [15]. Many instructors have opinion that instead of giving students only the core knowledge, they should get a well-rounded education that helps them be more flexible and learn about things from all over the world. There are a lot of things that happens at university or institutes that help students learn to appreciate the power of their minds and help them think deeply and work together across cultural boundaries [6].

Skills for the twenty-first century aren't novel. Since technology has advanced and the economy has become more knowledge-based, the amount of skills required to drive future labor forces has increased significantly. Dede (2009) suggested that since more and more professions may get emerged, the education system has to adapt and make suitable modifications [16].

Silva (2009) projected that the development of 21st century skills will define the future workforce [17]. That's why employers expect various skills from job candidate. As a result of the COVID-19 outbreak, the development of 21st century skills, particularly in higher education, faced a new challenge. Teachers and students are having a challenging time adjusting to the increased dependency on remote learning to replace traditional face-to-face learning.

A study by Dakhi et al. (2020) found that online learning may help students develop 21st century abilities. They emphasized that students should become used to the technology-based learning environment [18]. Students' mental and physical well-being being more affected by the COVID-19 pandemic in developing the student critical thinking abilities [19].

Since the outbreak of pandemic, remote learning has been a more common practice in higher education institutions [20]. There have been significant attempts to make the shift to online remote learning methodologies. Several educational tools, including radio and television, the web and instructional packages, have been introduced in response to the outbreak of the COVID-19 pandemic, which has now spread across the world's educational institutions [21]. As a result, producing a qualified student during the outbreak remained a challenge due to the restricted resources available to instructors [22]. The number of students who lack access to the Internet resources is greater than the number of students who do have access to these resources [21]. During the pandemic, governments across the world have made significant efforts to ensure that students everywhere have access to an education. It's during the COVID-19 pandemic that, this research was conducted to evaluate students' remote learning experiences and its effect on critical thinking abilities.

#### 4. Research methodology

**Phase1:** Extensive review of related literature and the similar work done.

**Phase2:** Questionnaire Development and Distribution.

**Phase3:** Piloting/Administering Questionnaire.

**Phase4:** Finding Analysis.

#### 5. Data Collection

The survey questionnaire was designed to gather university students' remote learning experiences during the COVID-19 pandemic, including their overall satisfaction, remote learning effectiveness, advantages and disadvantages as well as comparison between remote learning and face-to-face learning in terms of critical thinking skills. The questionnaire was piloted by the authors at their affiliated institution to ensure that the survey instrument was accurate. Subsequently based on the pilot research, survey questionnaires were delivered to students in Oman higher education institutions using the online survey for data collecting.

#### 6. Data Analysis

##### 6.1 Section1: Student Profile

This section of the survey collects student profile information which included the demographic details, age, year of study and whether the students have an easy access to internet or not.

##### 6.1.1. Demographic information

As per the responses collected from the 130 respondents, 25 were found to be males, which constituted 19.2% of the sample size, and the other 105 were females, which contributed to 80.8% of the sample size. The distribution is shown in the following table.

SN	Gender	Total	%
1	Male	25	19.2%
2	Female	105	80.8%
	<b>Total</b>	<b>130</b>	<b>100%</b>

### 6.1.2 Age distribution

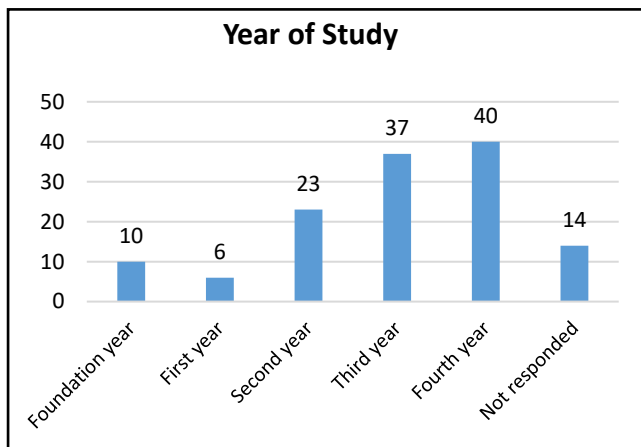
On the basis of responses collected from the 130 respondents, 26 were found to be less than the 20 years of age, which was 20% of the sample size; 98 were found to be in the age range of 20 and 30 years which was 75.4% of the sample size, and other 6 respondents were found to be of the age more than 30 years which was 4.6% of the sample size.

SN	Age group	Total	%
1	Less than 20	26	20%
2	Between 20 and 30	98	75.4%
3	More than 30	6	4.6%
<b>Total</b>		<b>130</b>	<b>100%</b>

### 6.1.3 Year of study

On the basis of responses collected from the 130 respondents, 10 students were in foundation year, 6 students were in first year, 23 students were in third year and 40 students in fourth year of study. 14 students did not responded to this question.

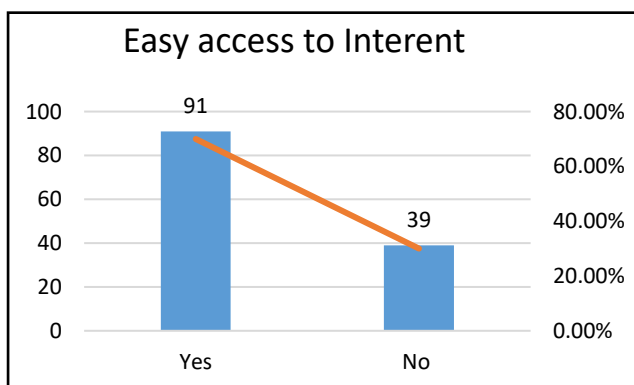
Chart 1.3



### 6.1.4 Have an easy access to internet?

As per the responses collected from the 130 respondents, 91 students had an easy access while 39 students did not had an easy access to internet.

Chart 1.4



## 6.2 Section2: Benefits & Drawbacks of Remote Learning

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This section of the survey collected students' opinions on Benefits and drawbacks of remote learning. Following are responses collected:

### 6.2.1 Benefits of Remote Learning

SN	Benefits	Total	%
1	Studying at your own pace	58	45.3%
2	Staying at home	77	60.2%
3	Ability to access recordings of lectures	67	52.3%
4	Comfortable environment	54	42.2%
5	Schedule flexibility and convenience	35	27.3%
6	More interaction with teacher and other students	24	18.8%
7	More ability to concentrate	23	18%
8	Self-discipline and responsibility	41	32%

### 6.2.2 Drawbacks of Remote Learning

SN	Drawbacks	Total	%
1	Technical Problems	49	38%
2	Poor learning conditions at home	23	17.8%
3	Lack of self-discipline	3	2.3%
4	No face-to-face interaction	18	14%
5	Lack of suitable device/software	7	5.4%
6	Social isolation	7	5.4%
7	Poor learning environment	7	5.4%
8	Internet availability	15	11.6%

### 6.3 Section3: Comparison between Face-to-Face Learning and Remote Learning

This part includes comparison results between face-to-face and remote learning by using five-point scale where 1 is very weak and 5 is very Strong.

#### 6.3.1 Effectiveness of Remote Learning in terms of Knowledge Enhancement

Scale	Total	%
1	23	17.7%
2	32	24.6%
3	44	33.8%
4	21	16.2%
5	10	7.7%
<b>Total</b>	<b>130</b>	<b>100%</b>

#### 6.3.2 Effectiveness of Remote Learning in terms of IT Skills Enhancement

Scale	Total	%
1	15	11.5%
2	25	19.2%
3	39	30%
4	38	29.2%
5	13	10%
<b>Total</b>	<b>130</b>	<b>100%</b>

### 6.3.3 Effectiveness of Remote Learning in terms of Social Competence Enhancement

Scale	Total	%
1	23	17.7%
2	25	19.2%
3	46	35.4%
4	24	18.5%
5	12	9.2%
<b>Total</b>	<b>130</b>	<b>100%</b>

### 6.3.4 Effectiveness of Face-to-Face learning in terms of increasing Knowledge

Scale	Total	%
1	12	9.2%
2	14	10.8%
3	32	24.6%
4	27	20.8%
5	45	34.6%
<b>Total</b>	<b>130</b>	<b>100%</b>

### 6.3.5 Effectiveness of Face-to-Face learning in terms of increasing IT Skills

Scale	Total	%
1	12	9.2%
2	11	8.5%
3	32	26.9%
4	42	32.3%
5	30	23.1%
<b>Total</b>	<b>130</b>	<b>100%</b>

### 6.3.6 Effectiveness of Face-to-Face learning in terms of increasing Social Competences

Scale	Total	%
1	6	4.6%
2	11	8.5%
3	33	25.4%
4	36	27.7%
5	44	33.8%
<b>Total</b>	<b>130</b>	<b>100%</b>

## 6.4 Section4: Acceptance of Remote Learning

This part includes information on Acceptance of Remote Learning by using the factors indicated as follows:

### 6.4.1 Information about how much did the students enjoyed Remote Learning during the pandemic

SN	Scale	Total	%
1	extremely unenjoyable 1	23	17.7%
2	very unenjoyable 2	31	23.8%
3	somewhat enjoyable 3	38	29.2%
4	very enjoyable 4	24	18.5%
5	extremely enjoyable 5	14	10.8%
	<b>Total</b>	<b>130</b>	<b>100%</b>

**6.4.2 Information about the student's preference between remote learning and face to face learning**

SN	Prefer Remote Learning?	Total	%
1	Yes	53	40.8%
2	No	77	59.2%
<b>Total</b>		<b>130</b>	<b>100%</b>

**6.5 Section5: Remote Learning and its effects on Critical Thinking abilities**

This part includes information on the effect of remote learning on critical thinking abilities by using the factors indicated as follows:

**6.5.1 Knowledge gathering and Problem solving**

SN	Statement	RL	F2F	Both
1	I can get information to support my ideas	45	71	14
2	I can give reasons for my ideas	43	74	13
3	I have more than one source of information	77	42	11
4	I can identify more options to solve a problem	55	63	12
5	I can think about possible results before I act	52	61	17

**6.5.2 Planning & organizing**

SN	Statement	RL	F2F	Both
1	I can plan where and how to get information on a topic	69	45	16
2	I can develop a checklist or outline the steps about an issue	52	59	19
3	I can put my ideas in order of relevance	49	62	19

**6.5.3 Flexibility of learning**

SN	Statement	RL	F2F	Both
1	I can have ideas from others even if I disagree with them	39	78	13
2	I can keep my mind open to different ideas when making a decision	31	85	14
3	I can collaborate with others to work on ideas	29	90	11

**6.5.4 Goal Setting**

SN	Statement	RL	F2F	Both
1	I can set my goals	39	62	29
2	I can plan on how and when to reach a goals	40	66	24
3	I can monitor the steps	43	64	23

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needed to reach a goals

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### 6.5.5 Classroom participation

SN	Statement	RL	F2F	Both
1	Students are often asked to explain answers	28	87	15
2	Students are encouraged to share their ideas	28	88	14
3	Students are encouraged to 'brainstorm' ideas	37	77	16
4	Students are encouraged to think about ideas and solutions from different view points	35	79	16
5	Students are encouraged to collaborate and solve problems	35	82	13

## 7. Findings & Discussion

According to the survey findings, 10.8 % find remote learning very enjoyable, 18.5 % find it very enjoyable, 29.2 % find it somewhat enjoyable, and 23.8 % and 17.7 percent find it very unenjoyable and extremely unenjoyable, respectively. It's concluded that the vast majority of students were dissatisfied with their remote learning experience.

About the benefits and drawbacks students associated with the new teaching and learning settings, students were most worried about technological issues (38%). In relation to the advantages of remote learning, participants mostly focused on staying at home (60.2%) and ability to access recording of lectures (52.3%). Between other drawbacks, poor learning conditions at home and no face to face interaction with 17.8% and 14% respectively.

Remote learning outperforms face-to-face learning when it comes to improving social skills and knowledge, as well as improving IT abilities. 33.8% of students feel that remote learning is superior in terms of improving their knowledge. Students prefer face-to-face instruction for IT skill development since there are more hands-on sessions involved than with remote instruction. Studying social skills revealed that 33.8% of students believe that face-to-face instruction is the most effective method. 34.6% students believe that face to face learning increase their knowledge. From the results, it's concluded that students prefer face to face learning over remote learning due to the effectiveness of face to face learning in developing student's IT skills, knowledge and social competence.

Critical thinking abilities were impacted by the urgency and intensity of the students' condition during COVID-19 quarantine and online shift. As a result, in survey part five, students were presented with several statements about remote learning and its impact on critical thinking abilities.

Students believe that face-to-face learning satisfies all statements, except for the statement, "I have more than one source of information," in which they believe remote learning is better. Students feel that face-to-face learning is stronger in terms of developing planning and organization skills, but they tend to believe that remote learning may help students acquire plan where and how to get the information from a topic' skill instead of face-to-face learning. Students feel that face-to-face learning has a greater impact on their flexibility, goal setting, and classroom participation skills.

## 8. Conclusion

On the basis of research findings, the researchers were able to identify students' perceptions of remote learning during the COVID-19' and its influence on critical thinking skills by conducting this study where the participants were from the different higher education institutions in Oman.



The findings of this research may be useful to the university administrators and facilitators which might further help to understand the issues related to remote learning and may help in ensuring a positive student experience.

### 9. Summary

The perception of students towards remote learning includes the advantage of staying at home, along with disadvantage of facing technical issues. This study also analyzed the effect of remote learning on students' critical thinking abilities, and found that face-to-face learning is more effective in terms of enhancing knowledge, IT skills, and social competencies. Furthermore, the face-to-face learning is more effective in terms of knowledge gathering, planning and organization, learning flexibility, goal setting, and classroom engagement. These are the factors that have a positive effect on student engagement and critical thinking abilities.

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