Evaluating Students' Perceptions of Virtual Classroom Instruction during COVID-19 Pandemic
"A Case Study: Mogadishu University Students"

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Abstract

Teaching and learning process through Virtual learning was widely used in tertiary education in Somalia as an alternative of the physical classroom during the COVID-19 pandemic when has spread around the world and all educational institutions including universities were closed. Mogadishu University has decided to restart the teaching and learning service over the virtual classroom via the ZOOM application. Based on that, this study aims to investigate how the extent of students' perception at Mogadishu University towards the virtual classroom instruction during CVID-19. The researcher adopted a descriptive method in this study over a survey on all faculties of the university with a sample size of 1087 students. For the data analysis, the researcher used SPSS in the data

analysis. The result of the study showed the positive perception and satisfaction of Mogadishu University students with virtual classroom instruction during COVID-19 as a vital alternative of physical classroom. The study recommended enhancing online courses via virtual classroom and devote maximum efforts on the provision of the required types of equipment and facilities.

Key Words: Evaluating, Students' Perception, Virtual Classroom, COVID-19, Mogadishu University.

1. INTRODUCTION

When the Pandemic COVID-19 spread around the world, human activities have been lockdown and the educational system was one of the most sector heavily affected by COVID-19 pandemic. Somalia as many Governments around the world has temporarily locked educational institutions to control the spread of the Covid-19. UNESCO revealed that more than 72% of the world's student's population are not attending schools/colleges (Jena, 2020). During this time, teachers and education professionals have been asked to supply students with teaching material and instruct students directly via remote digital tools. The expectation is that most students learn from home under the supervision of their parents. This is referred to as "home-schooling" in the media. (TUAC, 2020).

Among the educational institutions disrupted by COVID-19 tertiary education, World Bank Group Education(World Bank, 2020) illustrated total affected tertiary education students, by regions as the table (1)and
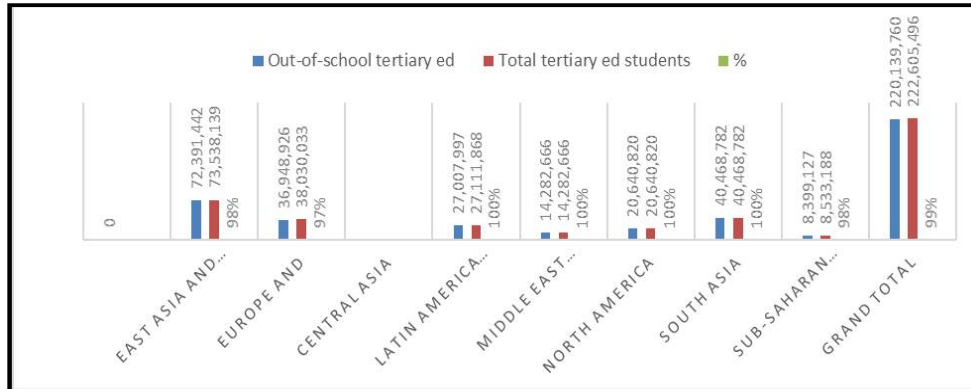
figure (1) demonstrate disaggregated by region and as a proportion of total disrupted tertiary education students:

Table 1. Disaggregated by Region and as Proportion of Total Disrupted Tertiary Education Students.

Region	Out-of-school tertiary edStudents	Total tertiary ed students	%
East Asia and Pacific	72,391,442	73,538,139	98%
Europe and Central Asia	36,948,926	38,030,033	97%
Latin America and Caribbean	27,007,997	27,111,868	100%
Middle East and North Africa	14,282,666	14,282,666	100%
North America	20,640,820	20,640,820	100%
South Asia	40,468,782	40,468,782	100%
Sub-Saharan Africa	8,399,127	8,533,188	98%
Grand Total	220,139,760	222,605,496	99%

Source World Bank, 2020

The table above and figure below show how COCID-19 disrupted tertiary education students whereas East Asia and Pacific, South Asia, Europe and the Central Asia and Latin America and Caribbean have out-schooled students spans 97-100% from total the students while the region of Sub-Saharan Africa where Somalia geographically located has out-schooled students 98% from the total of the students. The grand mean of the out-schooled students of all the regions from the total students during COVID-`9 99%.

Figure1. Disaggregated by Region and as Proportion of Total Disrupted Tertiary Education Students

Role of Technology in Education during COVID-19 Pandemic

Generally, it is obvious the importance of technology in education due to its role in the field of education in terms of the curriculum, as an instructional delivery system, as a means of aiding instructions and also as a tool to improve the entire learning process. It was discovered that the use of modern technology, the learning, and interactivity of students increase. (Maslin, Consultant, & Ltd, 2010). The importance of technology in education we observed and witnessed, during COVID-19 pandemic its vital role in continuing education throughout the world; schools, institutes, and universities. The public and private universities in Somalia widely used ICT in the educational process under COVID-19 from March to July 2020. This period was the first experience encountered by the administration of the universities, the teaching staffs as well as the students and the parents as cooperative learning services in

materials, sharing information, and interaction among lecturers and students successfully, the administration of the universities realized the importance of ICT in education and the possibility of launching online courses. This perception coincides with the World Bank's key principles for educational technology in tertiary education listed as follows(World Bank, 2020):

✓ **Ask Why?** for today's crisis response, the use of educational technology is to support remote learning at home for students during the closure of school due to COVID 19.

✓ **Design for Scale**: educational technology interventions must be designed for scale for all students. For most low- and middle-income countries, adopting a mobile-first approach is critical.

✓ **Empower Teachers**: technology should enhance teachers' capacity and capabilities for teaching and learning. In remote learning, the parent is now also a "teacher" but less so for higher education.

✓ **Engage The Ecosystem**: universities should consider a multi-stakeholder approach- engaging actors both inside and outside the university e.g. government, NREN (National research and education network), telecom companies, local/global IT companies, publishers, local educational technology startups.

✓ **Be Data-Driven**: set up feedback mechanisms to be able to collect, analyze and respond to feedback, provide appropriate Quality Assurance .(World Bank, 2020).

Virtual classroom

The virtual classroom is very effective in the dispensation of the Distance Education Program in many countries of the world. VC is a tool in enhancing teaching and learning in a diversified form of education. (Akpan, Etim, & Ogechi, 2016).

Virtual classrooms is quite different from physical or face to face classrooms. First, they are a shift away from the "norm" of having one teacher and a group of students all in one place at one time. In a virtual classroom, students may be in a different location from their teacher or other students in their class. Second, teachers and students in virtual classrooms may be using a range of ICTs to facilitate learning, communication, and collaboration (Bolstad & Lin, 2009).

There are several definitions of the virtual classroom, (techopedia.com) defines as" a teaching and learning environment where participants can interact, communicate, view and discuss presentations, and engage with learning resources while working in groups, all in an online setting." *(techopedia.com/, 2020)*

"A virtual classroom is an online learning environment that allows for live interaction between the tutor and the learners as they are participating in learning activities" (vedamo.com, 2020).

Whatls.com, defines virtual classroom as" an online learning environment. The environment can be web-based and accessed through a portal or software-based and require a downloadable executable file". (techtarget.com/, https://whatis.techtarget.com/, 2020).

Virtual classroom is a learning environment where instructors and students are separated by time and space or a web-based environment that simulates a live class room experience where instruction involves the synchronous or asynchronous use of electronic learning tools such as video-conferencing, online **classrooms,** whiteboards, chat rooms, document cameras, and so forth. It is a mode of computer-based education whereby the teacher interacts with students either via video-conferencing, Internet broadcast. (igi-global.com/, 2020).

The author tries to summarize the above definitions as" virtual classroom as an electronic learning environment for a live interaction that connects between instructor and students on one hand and among students themselves on the other hand during teaching and learning activities to achieve pre-stated educational objectives.

Learning Theories that Support Virtual Classroom

There is three classifications of educational technology namely; Teaching Technology, Instructional Technology and Behavioral Technology they are quite different in terms of the objectives, the content and the role of the teacher as a manager for the teaching technology, as a helper for the instructional technology and as secondary for the behavioral technology. For the Somali education context, Mogadishu University preferred teaching technology as an appropriate method to be followed in virtual classroom instruction under the COVID-19 pandemic. Based on the justification above, Mathew and Mysore (2016) described the fundamental principles and characteristics of Teaching Technology as teaching is a scientific process and its major components are content,

communication and feedback it is based on, as cited to Davies (1971); planning of teaching, organization of teaching, leading of teaching and controlling of teaching. There is a close relationship between teaching and learning. (Mathew & Mysore, 2016) it is vivid that the teacher and learner are active and vibrant but the teacher is as a manager of the teaching and learning process. This is what adopted in virtual classroom sessions at Mogadishu University during COVID-19.

The main learning theories backing teaching in the virtual classroom are stated below:

✓ **Social learning theorists** view learning as a process of adopting ways of thinking from the culture and community. Therefore, social interaction is an essential part of the learning process. Two pioneer thinkers in the social learning tradition were Albert Bandura and Lev Vygotsky.

✓ **Observational learning (Albert Bandura**) is based on behaviorist principles but is focused on modeling-learning by observing the behavior of others.

✓ **Vygotsky's Social Learning Theory** emphasized learning through social interaction. Vygotsky believed that our culture provides us with "cognitive tools" that affect the way we think. (Spector, 2015).

Mogadishu University Implementation of VC Instruction

Virtual classroom as an alternative of physical or face to face classroom was what the Somali private universities vividly used in the teaching and learning process during COVID-19. Mogadishu University as a stone cone of the private tertiary education in Somalia, from March to July has put on all its efforts to continue the education process. According to the ICT office report at Mogadishu University (Herery, 2020) MU administration has taken procedural stages below to implement the virtual classroom instruction throughout faculties:

The First Stage: Situation Analysis: to search for the appropriate means and tools to the lecturers, students, learning material, and faculty management as well as a learning environment.

The Second Stage: Planning: to take a common understanding of how to implement the virtual classroom and choose the best method to have experimented on students and mock classes to verify the pros and cons of each tool separately. In this stage, the ZOOM was designated to be the only application to be used in the virtual classroom instruction.

The third Stage: Mobilization and Induction: this stage all students, teaching staff, and personal management of the faculties are trained on the virtual classroom instruction via ZOOM.

The Fourth Stage: Implementation: it is continued the training for students and the formation of classes on the application to ensure the readiness of the faculties and the students to use the tool without obstacles.

The Fifth Stage: the follow-up phase and solving some technical problems faced by students and professors.

The Last Stage: Evaluation and Conducting Study on the process and procedures of the virtual classroom instruction, Based on that, this article is part of this evaluation.

Aim and Objectives of the Study

The core aim of this study is to evaluate the degree of students' perception of the virtual classroom at Mogadishu University during the COVOD-19 pandemic.

The specific objectives of the study are to:

1. Determine the level of students' skills to access virtual classroom sessions at Mogadishu University during the COVID-19 pandemic.

2. Verify the level of students' perception of the content shared and the delivered methods applied in the virtual classroom sessions at Mogadishu University during the COVID-19 pandemic.

3. Explore the level of students' perception of the communication and the interaction that practiced in the virtual classroom sessions at Mogadishu University during COVID-19 pandemic.

4. Identify the level of students' perception of the assessment conducted in the virtual classroom sessions at Mogadishu University during the COVID-19 pandemic.

5. Analyze the variances of students' perception according to the gender, faculties and academic years towards the virtual classroom during COVID -19pandemic

Hypotheses

The researcher   tests in this study the following hypotheses

Ha$_1$: There is a significant difference in perceptions at level (a=0.05) between male and female students at Mogadishu University towards the virtual classroom instruction during the COVID-19 pandemic.

Ha$_2$: There is a significant difference in perceptions at level (a=0.05) among the students as faculties at Mogadishu University towards the virtual classroom instruction during the COVID-19 pandemic.

Ha$_3$: There is a significant difference in perceptions at level (a=0.05) among the students based on level of years at Mogadishu University towards the virtual classroom during the COVID-19 pandemic.

Methodology

The study adopted a descriptive research design to discover the student's perception of the virtual classroom instruction at Mogadishu University. The study was carried out in 9 faculties of the university.. The random sampling technique was applied to draw the sample size of 1087 students. The data in this study are obtained by administering a questionnaire that included 23 items established by the researcher. The instrument comprised of five sections. Section one intended to seek the personal information from the respondents. Section two was aimed to find information on the students level of use of ICT; section three was

designed to seek information on the Content shared and the delivery methods of the Virtual classroom instruction while section four was on the Communication and the interaction during the Virtual classroom instruction and section five was established to determine the Assessment during the Virtual classroom instruction. The respondents were asked to show their degree of agreement or disagreement on each item statement of the questionnaire. Likert' scale was used in the instrument where Strongly Agree (SA) stands for 5 points; Agree (A) for 4points while Neutral 3 ; Disagree (DA) equals 2 points and Strongly Disagree (SDA) matches 1 point. For the reliability of the instrument that the researcher established by using SPSS, the result showed a high level of acceptance with (a=82). For the data analysis, a descriptive analysis was carried out built on mean and standard deviations of the items as well as ANOVA in SPSS to determine the variance among respondents by testing hypotheses pre-stated by the researcher. The weightings of the responses from research questions will be computed using means values intervals as options of; Very Good (VG) = 4.20-5.00 points; Good (G) = 3.40-4.19 points; Average (AV) = 2.60-3.39 points ; Faire (F) = 1.80-2.59 points and Poor (P)=1.00-1.79. For the weighting of faculties ranking towards their perception of virtual classroom instruction during COVID- 19 pandemic, questions will be figured by using total percentages values intervals as options of; Excellent Level(EL) =90-100; Very Good Level (VGL) =80-89; Good Level (GL)= 70-79; Poor Level(PL) =60-69 and Very Poor Level(VPL) = 50-59.

Results and Analysis

This section is to illustrate the data that emerged from respondents of the study. The researcher used SPSS in data analysis in the light of objectives and hypotheses of the study.

Table (2) Gender

	Frequency	Percent %
Male	637	58.6
Female	450	41.4
Total	**1087**	**100.0**

Table (2) shows that the male students in the study represent 58.6% while the female stands for 41.4%, this means the number of female students in Somalia in general, and Mogadishu University in particular increases positively in comparing with the past two decades.
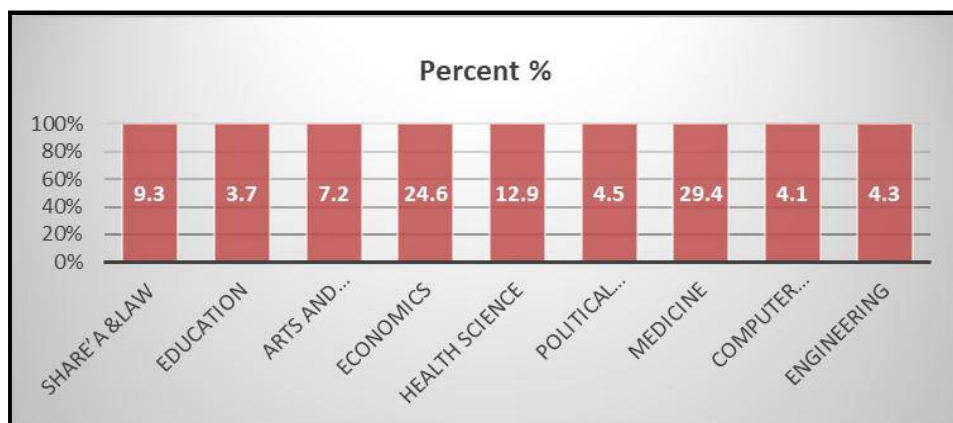
**Figure 2. Faculties Representative of the Study**

The figure above indicates the percentage of faculties in the study. The total number of faculties at Mogadishu University is 9 faculties. The faculty of Medicine, Economics, and health science scored up the high percentages of participants of the study.

Table 3. Level of Accessing the Virtual Classroom Sessions

Items	Statement	Mean	Std. Deviation	Decision
Q1	I am able to access virtual classroom.	3.78	.980	G
Q2	I face internet problem during virtual classroom sessions.	3.75	.974	G
Q3	My faculty offers us orientation on the use of virtual classroom instruction	3.29	1.183	AV
Grand Mean		**3.60**	**1.045**	**G**

Very Good (VG) = 4.20-5.00; Good (G) = 3.40-4.19; Average (AV) = 2.60-3.39; Faire (F) = 1.80-2.59 and Poor (P)=1.00-1.79.

The analysis on the table (3) and figure (3) illustrate that the students in faculties at Mogadishu University got a mean of 3.78 with SD .980 for item 1, 3.75 with SD .974 for item 2 as a Good level while item 3 obtained 3.29 with SD 1.183 as an Average level, however, the grand mean of the three items revealed 3.60. Thus, these results indicate that Mogadishu university students have a positive perception of a Good level of using ICT during virtual classroom instruction.
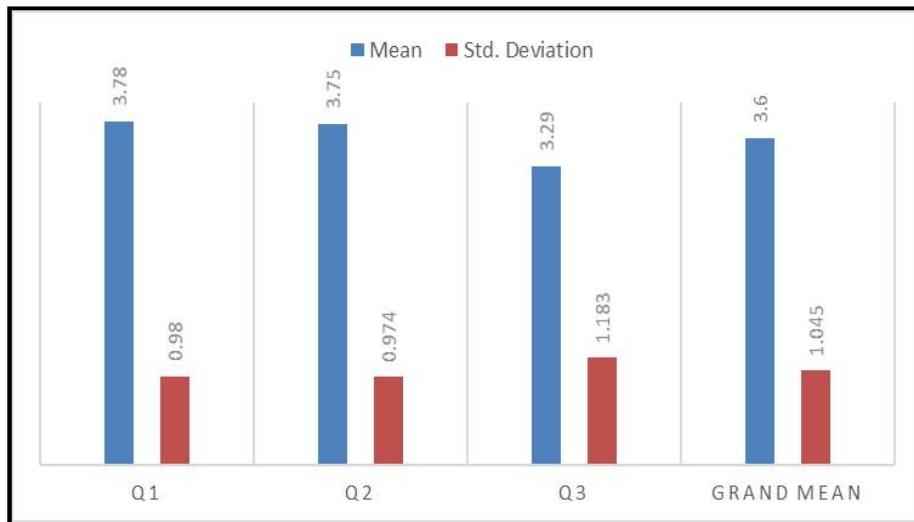
Figure 3. Level of Accessing the Virtual Classroom
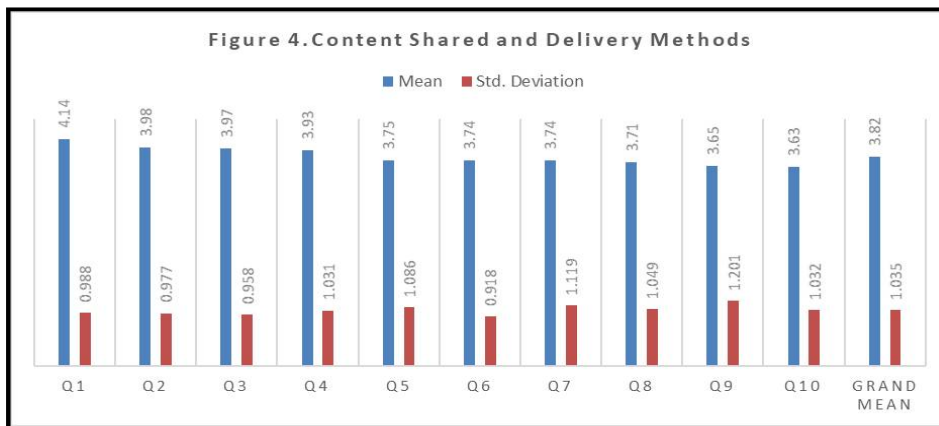
Table 4. Content Shared and Delivery Methods

Items	Statement	Mean	Std. Deviation	Decision
Q1	I am able to understand the content on virtual classroom.	4.14	.988	G
Q2	I am able to hear the lecture very well.	3.98	.977	G
Q3	The quality of shared screen materials appropriate.	3.97	.958	G
Q4	The time allocated to the lectures on virtual classroom enough.	3.93	1.031	G
Q5	The lecturers provide us the required learning resources.	3.75	1.086	G
Q6	I can study through virtual classroom effectively from the house.	3.74	.918	G

Items	Statement	Mean	Std. Deviation	Decision
Q7	I am able to do class activities during virtual classroom effectively	3.74	1.119	G
Q8	The lecturers mostly use lecturing method in the presentation.	3.71	1.049	G
Q9	The lecturers use variety methods during presentations.	3.65	1.201	G
Q10	The lecturers provide us equal learning opportunities during virtual classroom sessions.	3.63	1.032	G
Grand Mean		**3.82**	**1.035**	**G**

Very Good (VG) = 4.20-5.00; Good (G) = 3.40-4.19; Average (AV) = 2.60-3.39; Faire (F) = 1.80-2.59 and Poor (P)=1.00-1.79.

Results on the table (4) and figure (4) ascertain that students in faculties at Mogadishu university attained a mean of 4.14 with SD .988 for item 1, the other items from $2 - 10$, the mean values found were 3.98, 3.97, 3.93, 3.75, 3.74, 3.74, 3.71, 3.65 and 3.63 with their matching standard deviations as (.977, .958, 1.031, 1.086, .918, 1.119, 1.049, 1.201 and 1.032). The grand mean of all the ten items showed 3.82. Thus, these results highpoint that Mogadishu university students have a positive perception and satisfaction with content shared and delivered methods used in virtual classroom instruction with a Good level.

Figure 4. Content Shared and Delivery Methods

Table 5. Communication and Interaction

Items	Statement	Mean	Std. Deviation	Decision
Q1	The lecturers encourage us to learn effectively under covid-19 actively.	3.88	1.088	G
Q2	I consider the virtual classroom as the real /physical classroom for our learning courses.	3.85	1.018	G
Q3	I could reach the lecturers easily and ask them questions.	3.78	1.050	G
Q4	I can share information with my classmate smoothly when doing activities	2.76	1.420	AV
Grand Mean		**3.57**	**1.144**	**G**

Very Good (VG) = 4.20-5.00 ; Good (G) = 3.40-4.19; Average (AV) = 2.60-3.39; Faire (F) = 1.80-2.59 and Poor (P)=1.00-1.79.

The result of data presented as shown in table (5) and figure (5) prove that students in faculties at Mogadishu university shared a mean of 3.88, with SD 1.088 for item 1, 3.85, with SD 1.018 for item 2, the item 3 obtained 3.78 with SD 1.050 while item 4 has 2.76 with SD 1.420 thus this item obtained average level(AV) for sharing information among the students when doing activities smoothly. The grand mean of the four items indicated   3.57. Thus, these results show that Mogadishu university students confirmed a positive attitude towards communication and interaction adopted during virtual classroom instruction with a Good level.
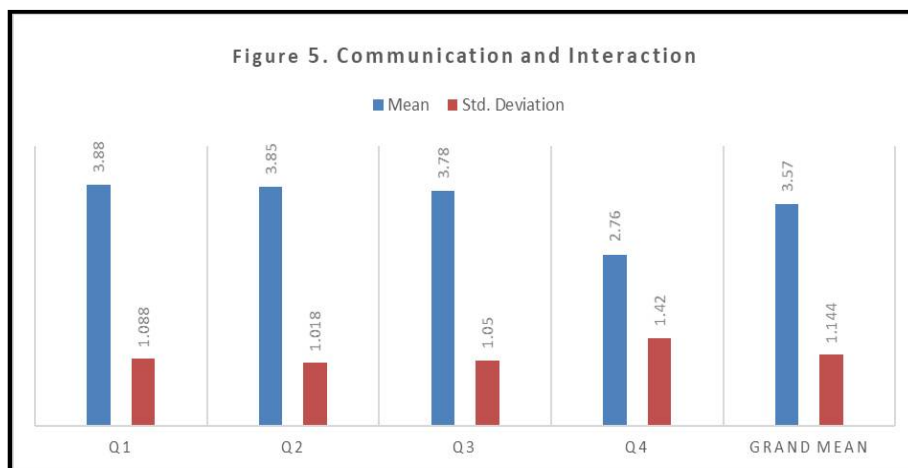
Figure 5. Communication and interaction

Table 6.Assessment

Items	Statement	Mean	Std. Deviation	Decision
Q1	The lecturers follow up our progress during virtual classroom sessions.	3.66	1.147	G
Q2	The lecturers give us tips on how to perform assignments.	3.64	1.043	G
Q3	The lecturers use oral questions during the lecture.	3.63	.980	G
Q4	The lecturers use quizzes during virtual classroom sessions.	3.57	1.101	G
Q5	The lecturers give us assignments.	3.23	1.385	AV
Q6	I am able to do online exam	3.13	1.214	AV
Grand Mean		3.47	1.145	G

Very Good (VG) = 4.20-5.00; Good (G) = 3.40-4.19; Average (AV) = 2.60-3.39; Faire (F) = 1.80-2.59 and Poor (P)=1.00-1.79.

Results on the table (6) and figure (6) demonstrate that students in faculties at Mogadishu university had a mean of 3.66 with SD 1.147 for item 1, 3.64, with SD 1.043 for item 2, item 3 obtained 3.63 with SD .980, item 4 has 3.57 with SD 1.101 all of these four items obtained the Good level. Item 5 gained 3.23 with SD 1.385 and 3.13 with SD 1.385 for item 6, hence both of the two items got level on Average. However, the grand mean of the six items indicated 3.47. Thus, these results reveal that Mogadishu university students gave a positive impression of

satisfaction with the assessment conducted during virtual classroom instruction with a Good level.
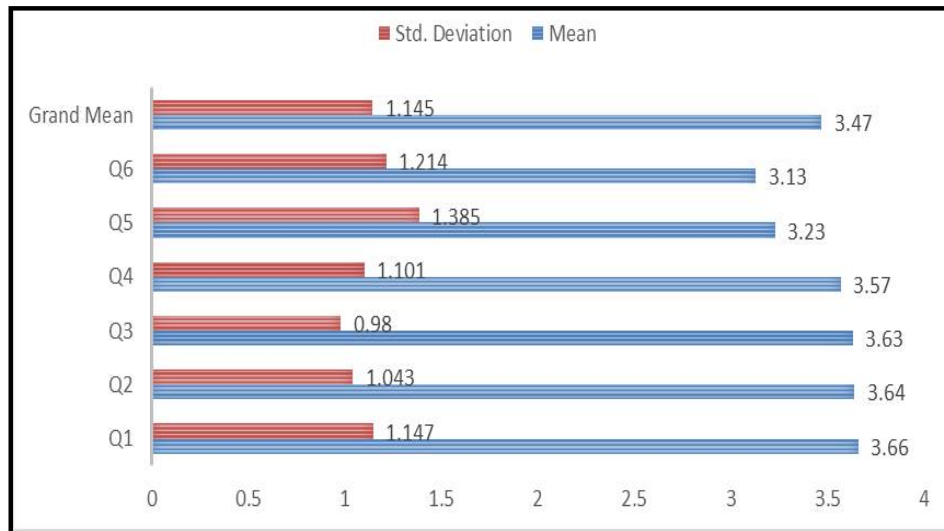

Figure 6. Assessment

Testing Hypotheses

The researcher demonstrates below testing the hypotheses pre-stated to determine whether they supported/ accepted or rejected:

***Ha₁**: There is a significant difference in perceptions at level (a=0.05) between male and female students at Mogadishu University towards the virtual classroom instruction during the COVID-19 pandemic.*

Table 7. Results of Hypothesis 1 Related to the Gender

ANOVA							Decision
		Sum of Squares	Df	Mean Square	F	Sig.	
Level of using ICT	Between Groups	62.699	1	62.699	27.464	.000	Ha Accepted
	Within Groups	20605.914	9026	2.283			
	Total	**20668.612**	**9027**				
Content shared and Delivery Methods	Between Groups	1208.908	1	1208.908	33.082	.000	Ha Accepted
	Within Groups	329833.223	9026	36.543			
	Total	**331042.131**	**9027**				
Communication and Interaction	Between Groups	24.680	1	24.680	3.658	.056	Ha Rejected
	Within Groups	60891.290	9026	6.746			
	Total	**60915.970**	**9027**				
Assessment	Between Groups	27.359	1	27.359	1.771	.183	Ha Rejected
	Within Groups	139429.483	9026	15.448			
	Total	**139456.842**	**9027**				

The summary of the result presented in Table (7) indicates P-values of items; the level of accessing to VC, and content shared with delivery methods are less than (a= 0.05). The implication of this result is that there is a significant difference of perception between male and female students at Mogadishu University for the two items, while the P-values for the communication with interaction and assessment are greater than (a=0.05) that means there is no significant difference in perception

between male and female students towards the communication with interaction and assessment conducted in the VC instruction.

Ha₂: *There is a significant difference in perceptions at level (a=0.05) among the students as faculties at Mogadishu University towards the virtual classroom instruction during the COVID-19 pandemic.*

Table 8. Results of Hypothesis 2 Related to the Students as Faculties

ANOVA							Decision
		Sum of Squares	df	Mean Square	F	Sig.	
Level of using ICT	Between Groups	1099.389	8	137.424	63.335	.000	Ha Accepted
	Within Groups	19569.224	9019	2.170			
	Total	**20668.612**	**9027**				
Content shared and Delivery Methods	Between Groups	13127.850	8	1640.981	46.553	.000	Ha Accepted
	Within Groups	317914.281	9019	35.249			
	Total	**331042.131**	**9027**				
Communication and Interaction	Between Groups	2413.267	8	301.658	46.505	.000	Ha Accepted
	Within Groups	58502.704	9019	6.487			
	Total	**60915.970**	**9027**				
Assessment	Between Groups	6409.029	8	801.129	54.307	.000	Ha Accepted
	Within Groups	133047.813	9019	14.752			
	Total	**139456.842**	**9027**				

Table (8) shows the *p-v*alues of 4 sections of the study instrument are less than (a= 0.05) therefore the hypotheses 2 "*There is a significant*

difference in perceptions at level (a=0.05) among the students as faculties at Mogadishu University towards the virtual classroom instruction during the COVID-19 pandemic." was supported.

Ha₃: There is a significant difference in perceptions at level (a=0.05) among the students based on level of years *at Mogadishu University* towards *the virtual classroom during the COVID-19 pandemic.*

Table 9. Results of Hypothesis Related to the Level of Years

ANOVA							Decision
		Sum of Squares	df	Mean Square	F	Sig.	
Level of using ICT	Between Groups	38.612	4	9.653	4.222	.002	Ha Accepted
	Within Groups	20630.000	9023	2.286			
	Total	**20668.612**	**9027**				
Content shared and Delivery Methods	Between Groups	1529.257	4	382.314	10.469	.000	Ha Accepted
	Within Groups	329512.874	9023	36.519			
	Total	331042.131	9027				
Communication and Interaction	Between Groups	534.807	4	133.702	19.980	.000	Ha Accepted
	Within Groups	60381.164	9023	6.692			
	Total	**60915.970**	**9027**				
Assessment	Between Groups	4436.576	4	1109.144	74.121	.000	Ha Accepted
	Within Groups	135020.266	9023	14.964			
	Total	**139456.842**	**9027**				

The summary of the results presented in table (9) indicate that P-values for items; the level of accessing to VC, and content shared with delivery methods communication interaction as well as the assessment are less than at (a= 0.05). The implication of this result is that there is a significant difference of perception among the students at Mogadishu University according to their levels of years. Thus hypothesis three was accepted and supported.

Ranks of the Students' Perception of VC during COVID-19 According to Faculties and Levels of Years.

The following tables and figures reveal the ranking level among Faculties and Academic Years at Mogadishu University on their perceptions of the virtual classroom instruction during COVID-19 Pandemic. The author compares the means of a section of instrument/questionnaire have been adopted in the study and determines the total percentage that each section of the questionnaire gained to reach the decision of the ranks of the faculties and the Academic Years.
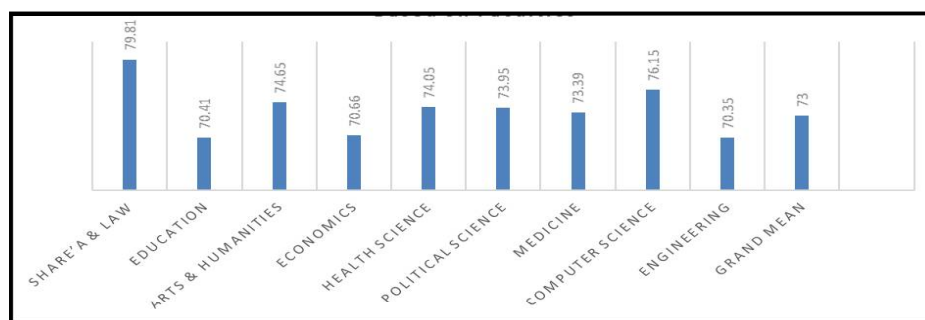
Table 10. Ranks of the Students' Perception of VC during COVID-19 According to the Faculties

Faculties	Level of Using ICT	Content Shared & Delivery Methods	Communication & Interaction	Assessment	Total Percentages	Decision
Share'a & Law	9.38	37.67	12.69	20.07	79.81	Good
Education	8.87	33.1	10.59	17.85	70.41	Good
Arts & humanities	8.81	36.44	11.77	17.63	74.65	Good
Economics	8.26	33.83	11.13	17.44	70.66	Good
Health Science	8.4	35.31	11.75	18.59	74.05	Good
Political Science	8.84	35.05	12.02	18.04	73.95	Good
Medicine	8.46	35.09	11.27	18.57	73.39	Good
Computer Science	9.09	35.7	12.02	19.34	76.15	Good
Engineering	8.81	33.56	11.11	16.87	70.35	Good
Grand Mean	8.7	35	11.5	18	73	Good

Table (10) and figure (7) below prove the ranking levels among faculties towards perception and satisfaction with virtual classroom instruction at Mogadishu University during COVID -19 pandemic, each faculty gained a positive level (Good level) as well as the total grand of the faculties (73) which reveals a Good level. The faculty of Share'a and Low obtained the top rank with (79.81), the second rank reached by faculty of Computer Science and Technology with (76.15) and the

faculty of Arts and Humanities attained the third position with (74.66) and the faculty of Health Science the fourth rank (74.05).
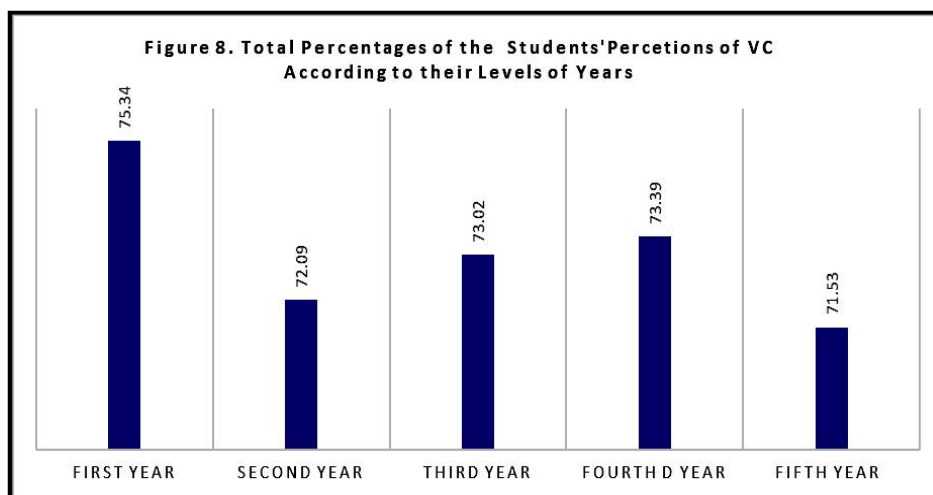

Figure 7. Total Percentages of the Student's Preceptions of VC Based on Faculties

Table 11. Ranks of the Students' Perception of VC during COVID-19 According to the Levels of Years

Academic years	Level of Using ICT	Content Shared & Delivery Methods	Communication & Interaction	Assessment	Grand mean	Decision
First year	8.65	35.57	11.85	19.27	75.34	Good
Second year	8.49	34.56	11.31	17.73	72.09	Good
Third year	8.62	34.94	11.46	18	73.02	Good
Fourth d year	8.63	35.22	11.4	18.14	73.39	Good
Fifth year	8.6	34.54	11.15	17.24	71.53	Good
Grand mean	8.6	35	11.43	18.1	73	Good

Table (11) and Figure (8) below highpoint the ranks of the students according to the academic years on their perceptions of virtual classroom instruction. The results showed a positive perception with the grand mean (73), thus it is a good level. For the ranks of each academic year in terms of their total percentages, the students of the first year have a higher perception of VC with (74.35), the fourth year gained the second level (73.39), and the third level for the third year with (73.02).

Figure 8. Total Percentages of the Student's Preceptions of VC According to their Levels of Years

Discussion of the Findings

Based on the objectives of this study and the hypotheses established by the researcher, the main findings are presented as follows:

Mogadishu University students have a positive perception of virtual classroom instructions during COVID-19 Pandemic at level Good (73%)

according to the study weighing scale. This result is a line with (Amritesh & Jeayaram, 2019) who underlined that virtual learning environments easy to understand for the students as well as the results found by (State, 2017)who expressed a view that virtual classrooms have positive impacts on the students and (Gedera, 2014) reached a similar result that virtual classroom affected student effectively.

All hypotheses at level a=0.05 for the four sections of the questionnaire of the study namely; the level of accessing virtual classroom instruction, content sharing, and delivery methods, communication with interaction and assessment, if there are any differences of perceptions among the students according to the gender, the faculties and the level of years, all these hypotheses were accepted except the sections "communication with interaction and assessment" for the gender were rejected and not supported therefore there is no significant difference perceptions between male and female students for the communication, interaction, and assessment during the virtual classroom.

Findings of the items for the section one of the questionnaire "Level of accessing VC" explored that the students have smooth access to the VC instruction sessions via internet effectively, this result is along with the result of (Guy Posey, Thomas Brugess, Marcus Eason, & Yawna Jones, 2010) they opined that the Internet is a very powerful tool that strongly affects teaching and learning activities.

For the items of section two, the results showed a positive perception of the students and their satisfaction with the content shared in terms of

teaching and learning materials provided and how the lecturers delivered the courses during virtual classroom instruction sessions this result, is an agreement with Sathya and Thangadurai (2017) found that the virtual classroom provides co-ordination, management and supervision of long term and day to day curriculum arranging, distribution and operations. These results stress that the virtual classroom is appropriate to the teaching and learning process (Sathya & Thangadurai, 2017).

The findings of questions of the section three "Communication and Interaction" a total mean proved that a potential of communication and interaction between teachers and the students on one hand and among students during sessions of the virtual classroom on the other hand, this is along with the results of Chadha(2018) who opined that e-learning enhances collaboration, discussions, and growth of educational experience of learners (Chadha, 2018) as well as the findings of Cakyrodlu(2014) who expressed a view of the virtual classroom improves teaching, learning, and learner interaction. (Çakýrodlu, 2014)

Finally, the items of the section four of the research instrument " Assessment" adopted via the virtual classroom was adaptable for the student and their perception was confident level, this result indicates how the virtual classroom instruction enhanced students' performance of the assessment this result in line with the result of Aniefiok, Ekpo-eloma, & Inebehe(2016) they discoursed that the use of the virtual classroom influences student academic performance(Akpan et al., 2016) as well as the findings of (Aniefiok, Ekpo-eloma, & Inebehe, 2016).

Recommendations

Built on the findings of this study, the researcher recommends as follows

1. Mogadishu University should accelerate online courses via virtual classrooms and devote maximum efforts on the provision of the required equipment and facilities. This will be helpful to keep abreast of modern education developments that arose in Somalia during COVID -19. It is expected in the near future, online courses will be launched at many Universities in Somalia.

2. Mogadishu University should improve the necessary skills to the students and the lecturers such areas more needed to engage the virtual classroom instruction.

3. Mogadishu University as a member of Somali REN (Research and Education Network), uses currently the internet service provided this network, should empower the internet to be benefited by both the students and the lecturers. This will contribute the active accesses of both the students and the lecturers to the virtual classroom instruction.

Further Studies

The researcher suggests further studies on   areas of   the online courses include:

1. The study on blended learning in higher education, Somalia.
2. The study related to the flipped learning at the tertiary education in Somalia.

3. A comparative study on the physical classroom and the virtual classroom in higher education, Somalia.

Contribution Knowledge of the Study

This study has explored one of the vital topics for the new education system in Somalia during the COVID-19 pandemic when all educational institutions locked down and the virtual classroom instruction became the only solution to continue teaching and learning processes at the universities not only in Somalia but the most universities around the world. Since, the virtual classroom instruction, via ZOOM was the new method of delivering lectures and learning materials at Mogadishu University, this study aimed to ascertain how the extent of the student's perception of virtual classroom instruction during COVID-19. The findings showed a positive perception of VC as a successful process. Thus, this result encouraged Mogadishu University leadership to plan in the near future to launch the online courses as a part of the education system of the university.

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