

**ADMINISTRATIVE EFFECTIVENESS OF BUILDING A CULTURE OF COLLABORATIVE ONLINE COMPLIANCE: A REFLECTION ON COMPUTER – BASED TEST (CBT) IMPLEMENTATION****Stella Chinye Chiemekwe, \*Felicia Ofuma Mormah and Mughele Ese Sophia**

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**Abstract**

Building a culture of collaborative online compliance of West African universities in implementing computer based test for quality instructional evaluation in schools forms the bed rock for strategic possibilities of utilizing opportunities for repositioning Higher education and overcoming challenges in the 21<sup>st</sup> Century teaching and learning using reflective exercises to build administrative effectiveness of West African universities. This paper offers lessons learned from reflecting on the implementation of Computer Based Test examination of a university in West Africa (University of Delta, Agbor -UNIDEL). The paper offered some conceptual clarifications; looked at the staff engagement in the implementation exercise, reflective exercises of staff and student in the implementation exercise, the strategies employed and the administrative effectiveness of the management of both human and material resources. The study is guided by four research questions and two hypotheses. The study is hinged on the Collaboration planning Approach and Theory of Constraint. The value of the chi square statistic obtained from the analysis is 1.534<sup>a</sup> and the *p*-value (0.674). The result is significant if *p*-value is equal to or less than the designated alpha level (normally 0.05). In this case, the *p*-value is greater than (>) the standard alpha value, so we reject the alternative  $H_1$  and accept null ( $H_0$ ) hypothesis that states that “There is no significant difference between male and female strategies for collaboration with colleagues within and outside the institution”. In other words, the result is not *significant* – the data suggests that there is no significant difference between the strategies deployed by the variables male and female for collaboration with colleagues within and outside the institution (UNIDEL). How the frequency of respondents indicate that male are more responsive to issues of building online compliance and computer based test (CBT) implementation.

**Keywords:** Administrative Effectiveness, Building a Culture of collaboration, Collaborative Online Compliance, CBT.

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**INTRODUCTION**

Building a culture of collaborative online compliance of West African universities in implementing computer based test for quality instructional evaluation in schools forms the bed rock for strategic possibilities of utilizing opportunities for repositioning Higher education and overcoming challenges in the 21<sup>st</sup> Century teaching and learning. Using reflective exercises to build administrative effectiveness of West African universities requires following a framework as depicted Lowry *et al.* (1997) “Collaborative planning” which involves interaction in the form of a partnership throughout consensus building, plan development, and implementation. In this instance, Lowry *et al.* described collaborative planning as an “interactive process of consensus building and implementation using stakeholder and public involvement”. Hall *et al.* (2019) also refers to the process as considering the specific conditions associated with a set of key influences for a given task, which requires written collaboration plan that is tailored to a given institution team effort. This interactive process of consensus building can only be possible with reflective practice of ruminating on individual and institutional present and previous actions so as to engage in a process of continuous learning which enables them to be more creative, evaluate and challenge some assumptions and misconceptions about issues and situations (Schon (2021) affecting Administrative Effectiveness Of Building A Culture Of Collaborative Online Compliance while reflection On Computer – Based Test (CBT) Implementation. This is line with Mcshane 2004 in Abdous (2010) observation of faculty rethinking roles and competencies which are being influenced by a number of

factors amongst which is the infusion of technology in teaching and learning, the fast growth of online learning and the continuous changes in the curriculum. This study is in line with Minaz *et al.* (2019) study titled evaluating the impact of blended learning: a mixed – methods study with difference-in-difference analysis whose quantitative data shows that blended learning was most impactful when teachers in this case lecturers/academic staff use data from adaptive digital content for differentiation. The analysis was performed to understand the effect of the degree of blended learning implementation on student outcomes and the ways teachers use blended learning in their classroom.

**Theoretical Framework**

The research study is guided by Collaboration planning Approach introduced by Judith Innes (1996) and Theory of Constraints (TOC) which is a management philosophy propounded by Eliyahu Goldrat in 1984. Goldrat suggested that “organizations can achieve their goals by identifying and leveraging system’s constraints”. The authors identified and explored some of the most common obstacles that confronted the Institution which are similar to that some other Universities in West Africa in their efforts to overcoming the obstacles of, administrative effectiveness in building a consensus, building a culture of collaborative online compliance, the operational procedure, the organizational setup, organizational ideology, power, capacity and applying the theory of constraints to overcome them. The case studies reveal a range of responses from the respondents for overcoming these obstacles while highlighting some important distinctions between models of collaborative planning and conflict resolution. The researchers also identified key questions for stake-holders to use in designing and assessing consensus-building processes.

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**Research Question employed**

The study was guided by four (4) research questions.

1. What administrative policies are in place for effective building of collaboration in your institution?
2. What are the strategies for collaboration with colleagues within and outside the institution?
3. What are tools/modes for evaluation of examinations in your institution
4. How effective are the implementation of CBT in your institution?

**Research Hypothesis**

Two (2) hypotheses were formulated to guide study as follows:

Ho1 There is no significant difference between male and female strategies for collaboration with colleagues within and without the institution

Ho2 There is no significant difference in male and female opinion of effectiveness of CBT implementation in the institution.

**METHODS**

**Research Design**

This research study was conducted in University of Delta, Agbor Nigeria, West Africa as a case study. The study combines both quantitative and qualitative elements in order to answer our research questions. This study is both descriptive and inferential in nature because the statistics of the findings will be used as a summary of the characteristics of the data set and inferential because two hypotheses were tested in order to give generalize view of findings. Data collected were analyzed using mean, standard deviation and Chi-Square test.

**Participants**

The participants for this study were drawn from the University of Delta, Agbor, Delta State Nigeria, academic staff. The major reason for the choice is that the University is public state owned institution. The study is a reflection on the implementation and execution of computer-based test (CBT) in the University since its inception. The total population of academic staff is 264. Sample size of 100 was selected with only 70 active participants.

**Instrument for Data collection**

In this study, quantitative and qualitative data were collected for the study using a structured questionnaire designed on a five (5) point Likert scale to elicit responses from purposively selected respondents and two (2) hypothesis tested at 0.05 level of significance were used. Interview schedules and observation schedule. The section A of the questionnaire contained seven items seeking to gathered biographic information of the respondents which were graphically presented in the study while the questionnaire items in section B were generated based on the research questions to elicit information from the academic and technical staff in the University of Delta, Agbor. The title of questionnaire is Administrative Effectiveness Of

Building A Culture Of Collaboration Online Compliance Questionnaire(Aebccocq).

**RESULTS AND DISCUSSION**

**Section A**

**Table 1. Statistics of the sex of the response**

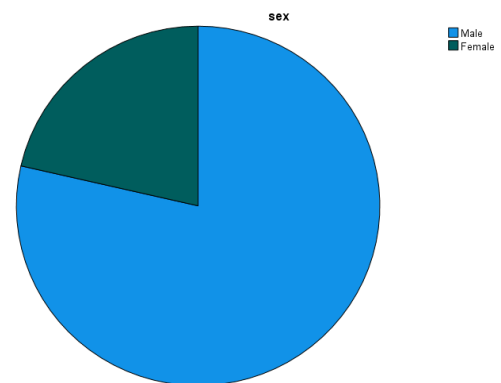
Statistics		
sex		
N	Valid	70
	Missing	0
Mean		1.2143
Median		1.0000
Mode		1.00
Minimum		1.00
Maximum		2.00
Sum		85.00

Table 1 shows the result for mean, median, mode, minimum, maximum and the sum for the sex of the respondents.

		sex			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	55	78.6	78.6	78.6
	Female	15	21.4	21.4	100.0
Total		70	100.0	100.0	

**Figure 2. Frequency distribution for the sex of the Respondents**

The frequency distribution for the sex of the respondents is available in Table 2. This is reflected in figure 1.



**Figure 1. Frequency distribution for the sex of the respondents**

Table 3: Statistics for Level of Class Taught by the respondents

**Table 3. Statistic of level taught by the Respondents**

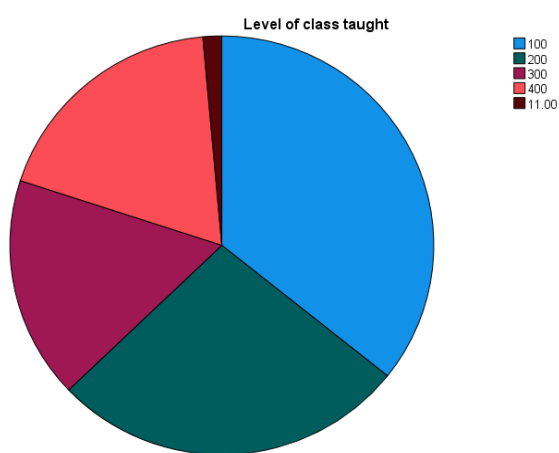
N	Valid	70
	Missing	0
Mean		2.3143
Median		2.0000
Mode		1.00
Minimum		1.00
Maximum		11.00
Sum		162.00

Table 3 shows the result for mean, median, mode, minimum, maximum and the sum for the level taught by of respondents.

**Table 4. frequency distribution for the level of class taught by the respondents**

		Level of class taught			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100	25	35.7	35.7	35.7
	200	19	27.1	27.1	62.9
	300	12	17.1	17.1	80.0
	400	13	18.6	18.6	98.6
	11.00	1	1.4	1.4	100.0
Total		70	100.0	100.0	

The frequency distribution for the level of class taught by the respondents is available in Table 2, which is reflected in figure 2.

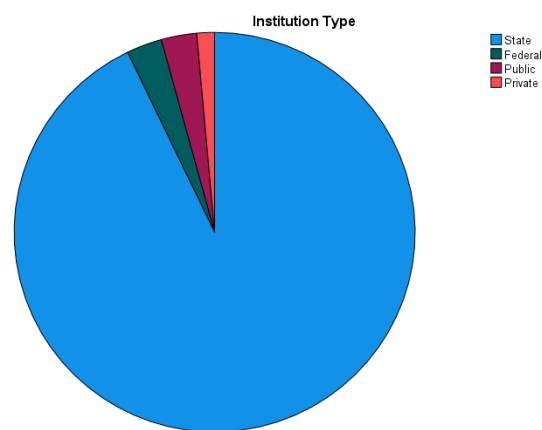


**Statistics**

Institution Type		N	Valid	70
		Missing		0
		Mean	1.1286	
		Median	1.0000	
		Mode	1.00	
		Minimum	1.00	
		Maximum	4.00	
		Sum	79.00	

**Institution Type**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	State	65	92.9	92.9	92.9
	Federal	2	2.9	2.9	95.7
	Public	2	2.9	2.9	98.6
	Private	1	1.4	1.4	100.0
	Total		70	100.0	100.0

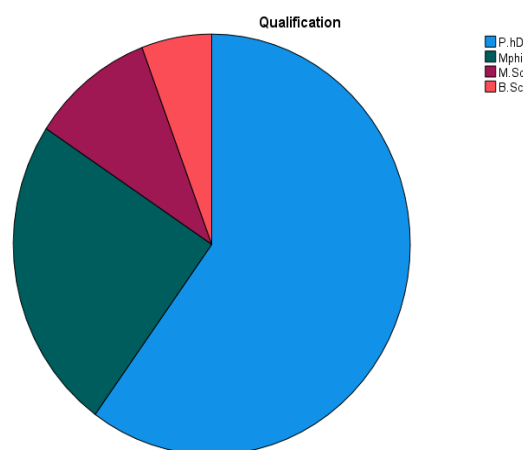


**Statistics**

Qualification		N	Valid	70
		Missing		0
		Mean	1.6143	
		Median	1.0000	
		Mode	1.00	
		Minimum	1.00	
		Maximum	4.00	
		Sum	113.00	

**Qualification**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	P.hD	42	60.0	60.0	60.0
	Mphil	17	24.3	24.3	84.3
	M.Sc	7	10.0	10.0	94.3
	B.Sc	4	5.7	5.7	100.0
	Total		70	100.0	100.0



The four (4) research questions were analyzed using frequency and mean rating scoring. The hypotheses were test at 0.05 level of significance using Chi-square.

**Research Questions**

1. What administration policies are in place for effective building of collaboration in your institution?

**Frequencies Distribution**

**Statistics**

Briefly state as an administrator,

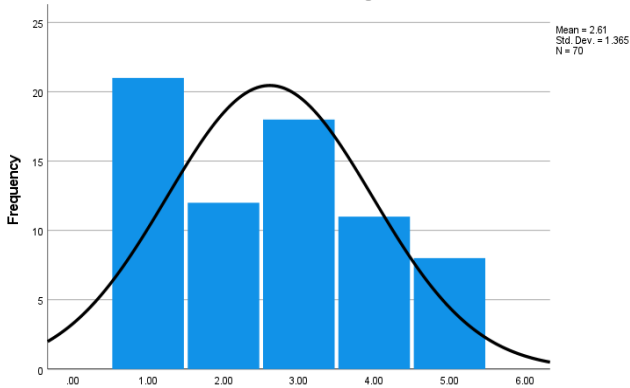
N	Valid	70
	Missing	0
Mean		2.6143
Median		3.0000
Mode		1.00
Minimum		1.00
Maximum		5.00
Sum		183.00

Briefly state as an administrator, your perception of building a culture of collaboration in online compliance.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Availability of all equipment	21	30.0	30.0	30.0
	Staff inclusion & participation highly encouraged	12	17.1	17.1	47.1
	Acquisition Information/knowledge	18	25.7	25.7	72.9
	Policy on Automation	11	15.7	15.7	88.6
	Global Reognition (Visibility)	8	11.4	11.4	100.0
	Total	70	100.0	100.0	

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Histogram

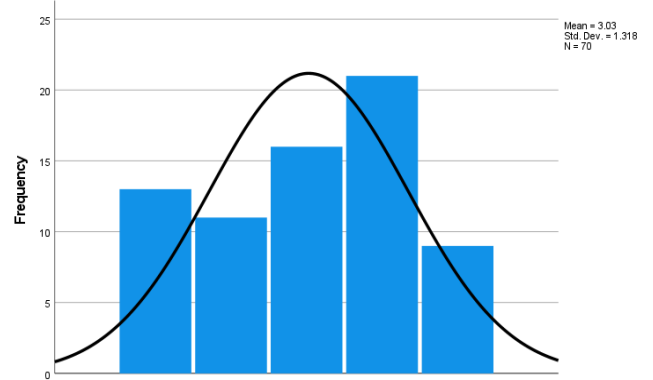


Briefly state as an administrator, your perception of building a culture of collaboration in online compliance.

What strategies did you employ for collaboration with colleagues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	knowledge sharing via zoom/google meet	13	18.6	18.6	18.6
	Staff Capacity building (series seminar and workshop)	11	15.7	15.7	34.3
	Online teaching and learning (LMS)	16	22.9	22.9	57.1
	Management will power to achieve CBT examination in UNIDEL	21	30.0	30.0	87.1
	Use of institutional email for information sharing	9	12.9	12.9	100.0
	Total	70	100.0	100.0	

Histogram



What strategies did you employ for collaboration with colleagues?

3. What are the tools/mode for evaluation of examinations in your institution

**Frequencies Distributions**

**Statistics**

Briefly state what policies aided

N	Valid	70
	Missing	0
Mean		2.7286
Median		2.0000
Mode		2.00
Minimum		1.00
Maximum		5.00
Sum		191.00

Briefly state what policies aided the success of the CBT examination in your institution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Timely Submission of exam questions to Center of Excellence	14	20.0	20.0	20.0
	Adherence to UNIDEL policy on CBT Exams	22	31.4	31.4	51.4
	Compulsory training	14	20.0	20.0	71.4
	Appointment of ICT staff to resolve complaints	9	12.9	12.9	84.3
	competence management and effective organisation	11	15.7	15.7	100.0
	Total	70	100.0	100.0	

2. What are the strategies for collaboration with colleagues within and without the institution?

**Frequencies Distribution**

**Statistics**

What strategies did you employ

N	Valid	70
	Missing	0
Mean		3.0286
Median		3.0000
Mode		4.00
Minimum		1.00
Maximum		5.00
Sum		212.00

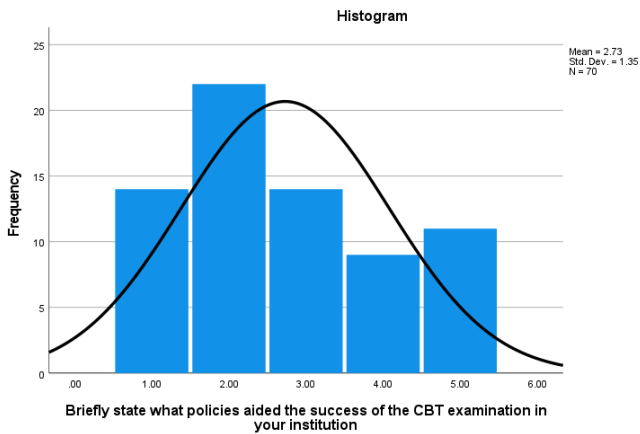




Monitoring team by left and some technical crew at the far right collaborating while CBT exam in progress resolving and appraising issues as they arise.

Please explain briefly your reflection on the CBT implementation in University of Delta, Agbor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Save cost of printing and other stationaries	17	24.3	24.3	24.3
	Participation of all staff	9	12.9	12.9	37.1
	Improve comptence and computer literacy of staff and students	15	21.4	21.4	58.6
	Power stability/electricity	8	11.4	11.4	70.0
	Well cordinated and recorded a huge success	21	30.0	30.0	100.0
	Total	70	100.0	100.0	



Students undergoing final screening before entry to the CBT Exam halls



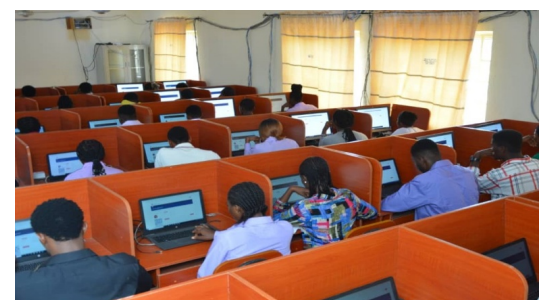
Students at one of the muster points, while waiting for their time.

The result represented in the diagram is with line guiding framework for Collaboration Planning for building a culture of collaborative online compliance with a reflection on computer based test/examination implementation with reference to Cervero and Wilson's (1994); Benson, A. D. (2003) negotiation of power and interests model of program planning guided the planning for the collaborative program. The key processes defined by the model are: Negotiating the Program's Needs-Assessment; Negotiating the Program's Educational, Management, and Political Objectives; Negotiating the Program's Instructional Design and Implementation; and Negotiating the Program's Administrative Organization and Operation. This involved all stakeholders in democratic planning process of negotiating around interest through the structure and operation of the planning team. The planning team has three co-leaders, one from each of the collaborating programs. The co-leaders represent the interests of other stakeholders in their programs: other faculty members, program leadership and administration and students.

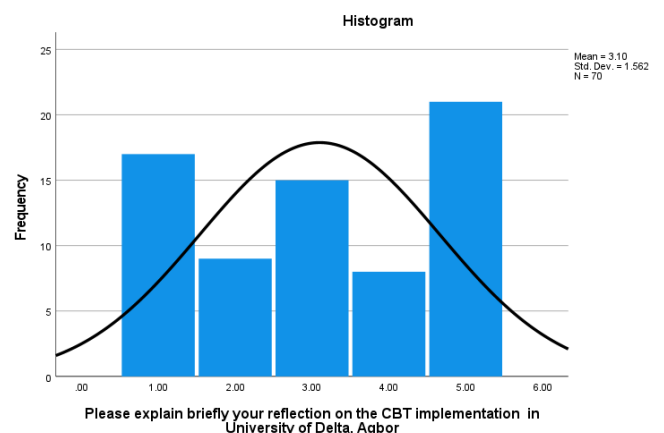
4. How effective are the implementation of CBT in your institution?

Frequencies Distributions

Statistics		
Please explain briefly your reflec		
N	Valid	70
	Missing	0
Mean		3.1000
Median		3.0000
Mode		5.00
Minimum		1.00
Maximum		5.00
Sum		217.00



Computer-based test (CBT) examination in progress.



H01: There is no significant difference between male and female strategies for collaboration with colleagues within and without the institution

Table 1: Case processing summary for sex\* I know what it is to collaborate to achieve a goal

Case Processing Summary						
	Cases Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
sex * I know what it is to collaborate to achieve a goal	70	100.0%	0	0.0%	70	100.0%

Table 1 shows 70 valid cases and no missing cases.

Table 2: Cross tabulation for sex\* I know what it is to collaborate to achieve a goal

sex * I know what it is to collaborate to achieve a goal Crosstabulation						
Count		I know what it is to collaborate to achieve a goal				Total
		Strongly Agree	Disagree	Neither Agree or Disagree	Agree	
sex	Male	40	2	1	12	55
	Female	11	0	1	3	15
Total		51	2	2	15	70

From table 2, 40 men out of the 55 strongly agree, 2 disagree, 12 agree and 1 neither agree or disagree that “I know what it is to collaborate to achieve a goal”, while 11 women out of the 15 strongly agree, none disagree, 3 agree and 1 neither agree or disagree that “I know what it is to collaborate to achieve a goal”.

Table 3: Chi-square test to determine if there is significant difference between male and female strategies for collaboration in UNIDEL

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.534 <sup>a</sup>	3	.674
Likelihood Ratio	1.774	3	.621
Linear-by-Linear Association	.000	1	.987
N of Valid Cases	70		

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .43.

The value of the chi square statistic is 1.534<sup>a</sup> and the *p*-value (0.674). The result is significant if *p*-value is equal to or less than the designated alpha level (normally 0.05). In this case, the *p*-value is greater than (>) the standard alpha value, so we reject the alternative *H*<sub>1</sub> and accept null (*H*<sub>0</sub>) hypothesis that states that “There is no significant difference between male and female strategies for collaboration with colleagues within and without the institution”. In order words, the result is not significant – the data suggests that there is no significant difference between the strategies deployed by the variables male and female for collaboration with colleagues within and outside the institution (UNIDEL).

Table 2 shows the degree to which sex does not determine strategy for collaboration with colleagues within and outside the UNIDEL community because 52 out of 55 men and 14 out of 15 women, knows what it is to collaborate to achieve their goals for compliance. Figure 5 show the result in Table 2.

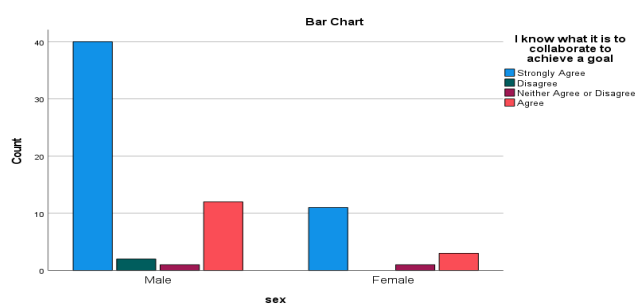


Figure 5. Sex and collaboration to achieve goal

Table 8: Case Processing Summary for sex\* male lecturers are more likely to utilize online teaching/learning platforms than female

	Case Processing Summary					
	Cases Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
sex * Male lecturers are more likely to utilize online teaching /learning platforms/devices than females	70	100.0%	0	0.0%	70	100.0%

Table 8 shows 70 valid cases and no missing cases.

Table 10: Sex \* male lecturers are more likely to utilize online teaching/learning platforms than female

sex * Male lecturers are more likely to utilize online teaching /learning platforms/devices than females Crosstabulation							
Count		Male lecturers are more likely to utilize online teaching /learning platforms/devices than females					Total
		Strongly Agree	Disagree	Neither Agree or Disagree	Agree	Strongly Disagree	
sex	Male	8	22	5	9	11	55
	Female	3	6	1	2	3	15
Total		11	28	6	11	14	70

Table 9 show that 8 men out of the 55 strongly agree, 22 disagree, 9 agree 11 strongly disagree and 5 neither agree or disagree that “male lecturers are more likely to utilize online teaching/learning platforms/devices than female”. While 3 women out of the 15 strongly agree, 6 disagree, 2 agree, 3 strongly disagree and 1 neither agree or disagree that “male lecturers are more likely to utilize online teaching/learning platforms/devices than female”.

Table 10: Chi-square test to determine if there is no significant difference in male and female opinions of the effectiveness of CBT implementation in the institution.

H02: There is no significant difference in male and female opinions of the effectiveness of CBT implementation in the institution.

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.373 <sup>a</sup>	4	.985
Likelihood Ratio	.368	4	.985
Linear-by-Linear Association	.115	1	.734
N of Valid Cases	70		

The value of the Pearson chi-square statistic is 0.373 and the p-value (0.985). The result is significant if p-value is equal to or less than the designated alpha level (normally 0.05). In this case, the p-value is greater than (>) the standard alpha value, so we reject the alternative  $H_1$  and accept the null ( $H_0$ ) hypothesis that states that “There is no significant difference in male and female opinions of the effectiveness of CBT implementation in the institution”. In other words, the result is not significant – the data suggests that there is no significant difference between the opinion effectiveness demonstrated by the variables male and female in the CBT implementation of the institution (UNIDEL).

Table 9: shows the degree to which sex does not determine the level of the effectiveness of CBT implementation in UNIDEL. This is because a total 33 out of 55 men and 9 out of 15 women, disagree and strongly disagree that “male lecturers are more likely to utilize online teaching/learning platforms/devices than female” which is a measure used to determine the null hypothesis ( $H_{02}$ ). Figure 6 show the result in Table 2.

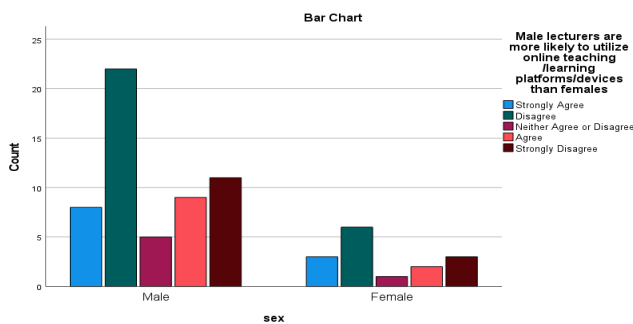


Figure 6. Sex \* male lecturers are more likely to utilize online teaching/learning platforms than female

**Conclusion**

Conclusively, “There is no significant difference between male and female strategies for collaboration with colleagues within and outside the institution”. In other words, the result is not significant – the data suggests that there is no significant difference between the strategies deployed by the variables male and female for collaboration with colleagues within and outside the institution (UNIDEL). However, the frequency of respondents indicate that 55 males and 15 females responded to 100 questionnaires that were distributed, indicating that females are more likely to shy away from responding to issues of building online compliance and computer based test (CBT) implementation. The level of classes taught were majorly 100 level ,year one students of the University of Delta, Agbor on all subjects in the institution with academic qualification distribution of lecturers ranging from PhD (60%), Mphil 24.3%, M.Sc 10% and B.Sc 5.7%. Academic administrators perceive that acquisition of information & communication knowledge, global recognition and policy on automation are key focal point in building a culture of collaboration in online compliance with a mean of 2.61 and standard deviation of 1.365.

Online teaching and learning with LMS (57.1%) Management will power to achieve CBT examination in Unidel 87.1% and compulsory use of institutional emails for information sharing were the strategies employed for collaboration with colleagues in the University of Delta, Agbor with a mean of 3.03 and standard deviation of 1.318. The mean of 2.728 describing the policies that aided the success of the CBT examination in UNIDEL with a cumulative percent of 51.4, 71.4 and 84.3 of adherence to Unidel policy on CBT exam, compulsory training and appointment of ICT staff to resolve complaints are in consonance with Cervero and Wilson’s (1994) in Benson, A. D. (2003) guiding framework for Collaboration Planning for building a culture of collaborative online compliance with a reflection on computer based test/examination implementation. Reflecting on the CBT implementation in Unidel, Academic staff agreed that there was improved competence and computer literacy of staff and students and improved power/electricity supply. They equally agreed that the CBT was well coordinated and recorded a huge success which helped the institution to save cost in printing and other stationeries as well as enabled complete compliance and participation of all staff and stakeholders in the exercise.

**Recommendation**

We recommend that the procedures of administrative effectiveness for building a culture of collaborative online compliance of the University of Delta, Agbor, being a newly created university be followed and improved upon. We suggest that a study of similar nature be replicated in other universities in West Africa.

**Compliance with Ethical standard**

**Conflict of Interest:** The authors report that we do not have any conflicts of interest associated with this research work. Permission was obtained from the University management before commencement of data collection.

**REFERENCES**

Abdous M, (2011) A process-oriented framework for acquiring online teaching competencies. Journal of computing in higher Education. Springer

Hall, K.L, Vogel A.L. & Crowston K. (2019) Ten components of the Collaboration plan (Hall et al 2015: <https://www.teamsciencetoolkit.cancer.gov/public/TSResourceBiblio.aspx?tid=3&rid=3261>)

Lowry, K., Adler, P., & Milner, N. (1997). Participating the public: Group process, politics, and planning. *Journal of planning education and research*, 16(3), 177-187.

Fazal, M., Panzano, B, & Luk ,K (2019) Evaluating the Impact of ‘blended Learning: a mixed- methods study with difference-in difference analysis. *TechTrends*, 64(1),70-78.

Benson, A. D. (2003). Dimensions of quality in online degree programs. *The American Journal of Distance Education*, 17(3), 145-159.

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