Online Supervision Competencies Required by University Lecturers and Postgraduate Students in the Post-Covid-19 Era in North East, Nigeria

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Abstract:- **The main purpose of the study was to determine the Online Supervision Competencies Required by University Lecturers and Postgraduate Students in the Post-Covid-19 Era in North East Nigeria. The study adopted descriptive survey research design, three research questions and three null hypotheses guided the study. The population of the study was 115 which comprised of 82 Lecturers and 33 Postgraduate (PG) Students in the two Universities of North East, Nigeria. Purposive sampling technique was used to select 82 from the population of the Lecturers, that is senior lecturers and above, while simple random sampling was used to select the postgraduate students. A structured questionnaire titled: Questionnaire for Online Supervision Competencies Required by Lecturers and Postgraduate Students in Universities in North East Nigeria (QOSCRLPSUNN) was developed by the researchers and used as instrument for the study. The instrument was validated by three experts and a reliability of 0.81 index was obtained using Cronbach Alpha. Mean and Standard Deviation were used to answer the three research questions while, t-test statistics was used to test the three null hypotheses at 0.05 level of significance. Findings of the study revealed that Online supervision tools competencies required by Lecturers and Postgraduate students in the post-Covid 19 era are: Microsoft Office, Google Drive, Instant massaging tool, Dropbox, Video conferencing, Screen sharing tool, Statistical Package for Social Sciences, Power point projector, Cell Phones and Telephones among others while Open Data Kit/Kobo Collectand File annotations tool were found not required by the respondents. Based on the findings, it was recommended among others that University trainings funded by donor-agencies such as International Computer Driving Licence ICDL by TET fund and Advanced Digital Appreciation Programme for Tertiary Institutions (ADAPTI) by Digital Bridge, an upshot of NCC should expose the University Lecturers to the various online supervision competencies and tools competencies for upmost resourcefulness. Also, University administrators should partner with the ICT Units in the universities to provide more training to Lecturers and Postgraduate students in order to enhance their competencies.**

Keywords:- Supervision, Lecturers, Postgraduate Students, Online, Competencies.

I. INTRODUCTION

The world and indeed our nation Nigeria faces many challenges that it will require both multi-inter-and trans-disciplinary research efforts to solve. These challenges may include but not limited to the ravaging Corona Virus Pandemic, Ebola and Lassa fever, climate change, access to clean water, affordable and clean renewable energy, just to mention but a few. These challenges will need to be solved through the gathering and sharing of knowledge across disciplines, institutions and other entities nationally and internationally. Standard procedures such as research-enabled academic attainment that will be verifiable, reproducible, trusted and acceptable to the populace must be in place so that the outcomes of the efforts can be easily adopted and utilized to checkmate the many challenges (Ajewole, 2021). Nigeria was among the first countries in Sub-Saharan Africa to identify COVID-19 (coronavirus) cases and has since implemented strict measures to contain the spread of the virus. COVID-19, a novel disease, became known when it was identified as the causative agent in reported cases of patients with pneumonia admitted in hospitals in Wuhan, China, in December 2019 (Zhu etal. 2020). This disease is spread through airborne zoonotic droplet, and people can get infected when in close contact with the cough and sneeze of persons who have symptoms from the virus (Kumar et al. 2020). In March 12, 2020, the World Health Organization (WHO) officially declared COVID-19 also known as coronavirus a pandemic (WHO, 2020). Due to this pandemic, educational institutions in Nigeria and most countries around the world were closed. In March 2020, the Federal Ministry of Education in Nigeria directed the closure of all schools and they only began reopening in October, of the same year (Obiezu, 2020).Data from UNESCO showed that the peak in closure of schools was at the beginning of April 2020, when about 1.6 billion students were affected across 194 countries (UNESCO 2011).
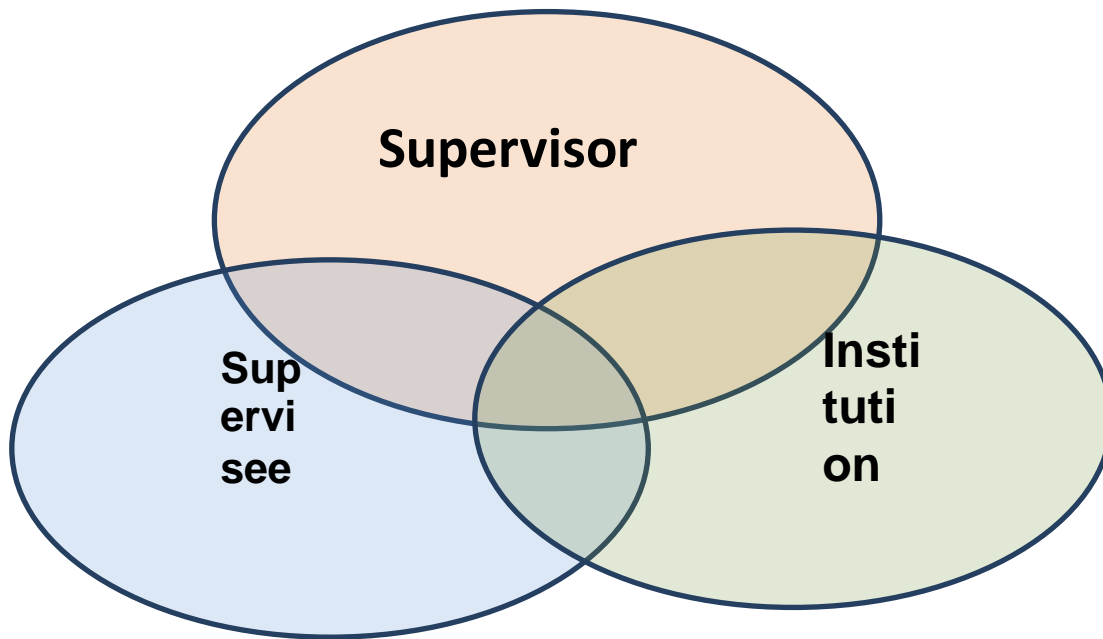
Fig. 1: Three factors that are key in postgraduate studies supervision

The closure of the Universities means that supervision of the postgraduate students had to come to a halt or come up with strategies to ensure that learning continues during the lockdown (The lockdown has made some tertiary institutions in Nigeria, particularly the privately owned quickly moved from traditional face-to-face teaching method to remote teaching. As the period of total lockdown extended, more institutions quickly switched to online teaching, but not supervision. Both the teachers and students had to adapt swiftly to the new mode of education as they were trained virtually on how to use distance learning tools (Isaac et'al 2021). Teachers and students faced challenges in adapting to virtual meetings, supervision and/or classroom activities. Migrating to remote supervision within a short period was difficult, especially in a developing country like Nigeria where advanced technology has not been well integrated into the educational system (Ebohonetal 2021). COVID-19 which has changed the way teaching and learning take place, shows no evidence of waning down soon and its impact give the impression to last for a long period, hence, the need for virtual classroom.

Supervision is a Latin Word. Super means 'from the above' and vision means 'to see'. In ordinary sense of the term, supervision means overseeing the activities of others (Felix, 2016). The Cambridge English Dictionary (2020) defined supervision as the act of watching a person or activity and making certain that everything is done correctly and   safely.

The above definitions explain what these terms literarily mean but in education, the meaning is a little streamlined and limited to just an aspect that is, research/project supervision. A remote/online supervision is an online learning environment that allows for live interaction between the tutor and the learners as they participate in learning activities (Bhakta & Dutta, 2016). In other words, the virtual classroom is a shared online space where the learners and the tutor work together simultaneously (Buckenmeyer, 2010). However, in this study a virtual classroom is an online teaching and learning environment where teachers and students can present course materials, engage and interact with other members of the virtual class, and   work   in   groups   together. Usually, these interactions take place through video conferencing. The participants have tools to present learning content in different formats, as well as to implement collaborative and individual activities. In this type of interaction, the teacher has the particularly important role of the moderator who guides the learning process and supports group activities and discussions. The key distinction of a virtual classroom is that it takes place in a live, synchronous setting. Online coursework can involve the viewing of pre-recorded, asynchronous material, but virtual classroom settings involve live interaction between instructors and participants (Badiaetal, 2013).

II. STATEMENT OF THE PROBLEM

Universities have the mandates to teach, research and community service; however, it's observed with dismay that the second and perhaps, one of the building blocks of all the developed nations, research, has been faced with challenges even before the Covid-19 pandemic; but it is clearer during and post covid-19 Era that little if not no significance has been assigned to it. While tertiary institutions resolved on virtual classrooms for teaching and learning, little effort was geared towards the continuation of research at postgraduate level, who is to blame, the supervisors, the supervisees or the entire system? The abrupt migration to online might have resulted in the negligence faced by research in North East Nigeria. It is against this background that the competencies required by university Lecturers and the Postgraduate students, who are the recipients of the supervision process had to be ascertained in order to be rest assured of the culpability of the stakeholders and proper ways to address that in post-covid-19 Era in North East Nigerian Universities.

III. PURPOSE OF THE STUDY

The main purpose of this study was to determine the online supervision competencies required by university lecturers and postgraduate students in the post-covid-19 era in North East, Nigeria. Specifically, the study seeks to:

- Determine the online supervision tools competencies required by university lecturers and postgraduate students in the post-COVID-19 Era in North East, Nigeria
- Determine the online supervision competencies required by university lecturers and postgraduate students in the post-COVID-19 Era in North East, Nigeria
- Determine the supervisors' expectations from their supervisees in the post COVID-19 era in North East, Nigeria

IV. RESEARCH QUESTIONS

- What are the online supervision tools competencies required by university lecturers and postgraduate students in the post-COVID-19 Era in North East, Nigeria?
- What are the online supervision competencies required by university lecturers and postgraduate students in the post-COVID-19 Era in North East, Nigeria?
- What do the supervisors expect from their supervisees in the post COVID-19 era in North East, Nigeria?

- **Hypotheses**
  The following hypotheses were tested at 0.05 level of significance

HO₁: There is no significant difference between the mean responses of Lecturers and Postgraduate students on the online supervision tools competencies required by university Lecturers and Postgraduate students in the post- COVID-19 era in North East, Nigeria

HO₂: There is no significant difference between the mean responses of Lecturers and Postgraduate students on the online supervision competencies required by university

Lecturers and Postgraduate students in the post- COVID-19 era in North East, Nigeria

HO₃: There is no significant difference between the mean responses of Lecturers and Postgraduate students on what the supervisors expect from their supervisees in the post COVID-19 era in North East, Nigeria?

V. METHODOLOGY

Survey research design was adopted for the study. Nworgu (2000), posited that, survey design is the best way for studying the attitude, behavioural pattern or the facts about a given population. The study was carried out in North East, Nigeria. The region comprises of Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe states. Two federal universities were involved in the study. Abubakar Tafawa Balewa university (ATBU), Bauchi and Modibbo Adama University (MAU), Yola. These are the Universities that offer Technology Education at undergraduate and postgraduate level. Purposive sampling was employed for the study. While simple random sampling was used to select the postgraduate students.

82 lecturers and 33 PG students were involved in the study.

The instrument for data collection was a 44 item structured questionnaire; tagged Questionnaire for Online Supervision Competencies Required by Lecturers and Postgraduate Students in Universities in North East, Nigeria (QOSCRLPSUNN) was used to elicits the required responses from the respondents. The questionnaire items were administered to both lecturers and PG students using the five (5) point Likert scale as follows:

Highly Required (HR)
    Strongly Agreed (SA)   -5
Required(R)
    Agreed (A)   -4
Moderately Required (MR)
    Undecided (U)   -3
Slightly Required (SR)   Disagreed (D)
      -2
Not Required (NR)
    Strongly Agreed (SA)   -1

The questionnaire was divided into sections thus: section A, online supervision tools competencies required; section B, online supervision competencies required and section C supervisor's expectation of the supervisee. The draft of the questionnaire was validated by two experts from Department Technology Education (MAU Yola) and five

online tutors. The instrument was trial tested by administering it to lecturers and PG students of Federal University of Wukari, Taraba state. A reliability coefficient of 0.81was realized and was considered reliable according to Uzoagulu (2011). All research questions were answered using mean and standard deviation.

All hypotheses were tested using T-Test statistics. Any item with a mean value of 3.50 and above was considered required or agreed, while items with the mean value of less than 3.50 was considered not required or disagreed. The statistical package for social science (SPSS) was used to run the analysis of data collected. The decision rule for hypotheses is; if the P-value was less or equal to 0.05 (p<0.05), the null hypotheses was rejected, however, if P-value was greater than 0.05 (p>0.05), the null hypotheses was accepted.

VI.   RESULTS

A. Research Question One:

What are the online supervision tools competencies required by university lecturers and postgraduate students in the post-COVID-19 Era in North East, Nigeria?

S/NO	ITEMS $N_L = 82$, $N_{PS} = 33$	$\bar{x}_l$	$\bar{x}_{ps}$	$\bar{x}_G$	σ_G	Remark
1.	Microsoft Office	4.24	4.21	4.22	1.55	Required
2.	Google Drive	3.86	3.82	3.84	0.49	Required
3.	Instant massaging tool	3.9	3.88	3.89	0.45	Required
4.	Dropbox	3.79	3.76	3.78	1.49	Required
5.	Video conferencing	4.02	4.06	4.04	0.2	Required
6.	Screen sharing tool	4.12	4.2	4.16	0.88	Required
7.	File annotations tool	2.45	2.48	2.46	0.34	Not Required
8.	Statistical Package for Social Sciences	3.02	3.12	3.06	0.48	Required
9.	Open Data Kit/Kobo Collect	2.52	2.48	2.51	0.52	Not Required
10.	Power point projector	3.38	3.62	3.5	0.74	Required
11.	Cell Phones and Telephones	4.14	4.18	4.16	0.88	Required
12.	Emails	3.56	3.79	3.68	0.5	Required
13.	CD-ROMS	3.46	3.59	3.53	0.49	Required
	Group Mean			**3.78**		**Required**

Table 1: Mean and Standard Deviation of Lecturers and Postgraduate Students on Online Supervision Tools Competencies Required

$\bar{x}_l$= *Mean of Lecturers*, $\bar{x}_{ps}$ = *Mean of Postgraduate Students*, $\bar{x}_G$= *Grand Mean*, σ = *Standard deviation* n_l = *Number of Lecturers*, n_{ps} = *Number of Postgraduate Students*, n =*Total Number of Respondents*
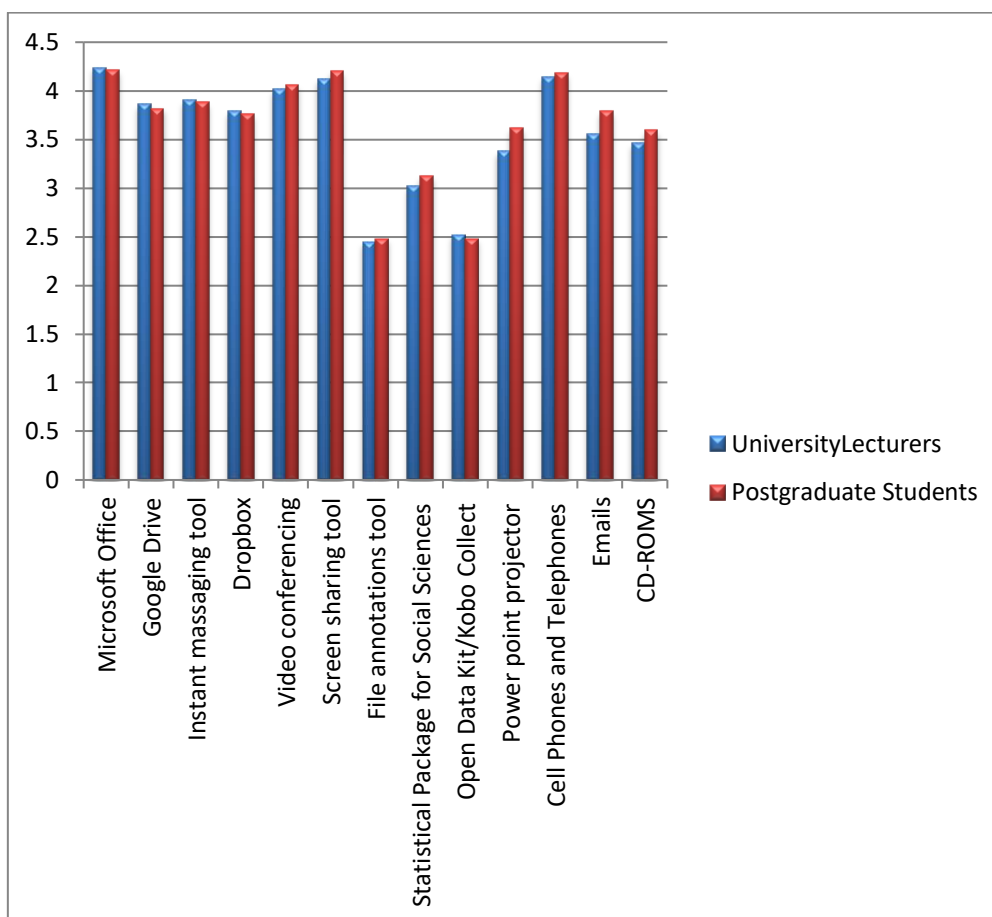
Fig. 2: Online Supervision Tools

Table 1 shows the responses on the online supervision tools competencies required by university lecturers and postgraduate students in the post-COVID-19 Era in North East, Nigeria. The result showed that items 7 and 9 are online supervision tools competencies required by Lecturers and Postgraduate students, while items 1-6, 8, 10-13 are all online tools required as shown by their respective mean.

B. Research Question Two:

What are the online supervision competencies required by university lecturers and postgraduate students in the post-COVID-19 Era in North East, Nigeria?

S/NO	ITEMS $N_L = 82$, $N_{PS} = 33$	$\bar{x}_l$	$\bar{x}_{ps}$	$\bar{x}_G$	σ_G	Remark
1.	Ability to multitask without interference	3.29	3.55	3.42	0.51	Required
2.	Proficient in command of language	4.24	4.21	4.22	1.55	Required
3.	Ability to type with speed and accuracy	2.04	2.92	2.48	0.2	Not Required
4.	Ability to focus on result	3.09	3.66	3.38	0.48	Required
5.	Ability to plan and organize	3.57	3.89	3.73	0.48	Required
6.	Ability to communicate effectively with students	3.01	3.12	3.07	0.48	Required
7.	Ability to manage time and human resources	3.89	3.10	3.50	0.74	Required
8.	Ability to concentrate online without engaging in social/extra curricula activities	3.49	3.51	3.50	0.74	Required
9.	Ability to give instant feedback	4.19	4.12	4.16	0.88	Required

		$\bar{x}_l$	$\bar{x}_{ps}$	$\bar{x}_G$	σ	
10.	Ability to direct online discussion without distraction	3.55	3.81	3.68	0.50	Required
11.	Ability to use Microsoft office tools (Ribbons)	3.86	3.20	3.53	0.49	Required
12.	Ability to work as a team	3.99	3.99	3.99	0.49	Required
13.	Ability to reflect and improve research work	3.89	3.90	3.90	0.67	Required
14.	Ability to be creative and innovative	4.24	4.21	4.22	1.55	Required
15.	Ability to provide motivational support	3.83	3.40	3.62	0.60	Required
16.	Ability to manage learning environment and resources	3.84	3.40	3.62	0.60	Required
17.	Ability to attract grants and sponsorship	3.86	3.32	3.59	0.53	Required
18.	Ability to adapt and readapt to different strategies	3.79	3.60	3.70	0.60	Required
19.	Ability to involved in advanced studies and related research problems	3.40	3.60	3.50	0.69	Required
20.	Ability to create good relationship between the students and supervisors to motivate students	2.84	2.64	2.74	0.42	Not Required
21.	Ability allow for regular contact	3.52	3.64	3.58	0.53	Required
	Group Mean			**3.69**		**Required**

Table 1: Mean and Standard Deviation of Lecturers and Postgraduate Students on Online Supervision Competencies Required

$\bar{x}_l$ = *Mean of Lecturers,* $\bar{x}_{ps}$ = *Mean of Postgraduate Students,* $\bar{x}_G$ = *Grand Mean,* σ = *Standard deviation* n_l = *Number of Lecturers,* n_{ps} = *Number of Postgraduate Students, n =Total Number of Respondents*
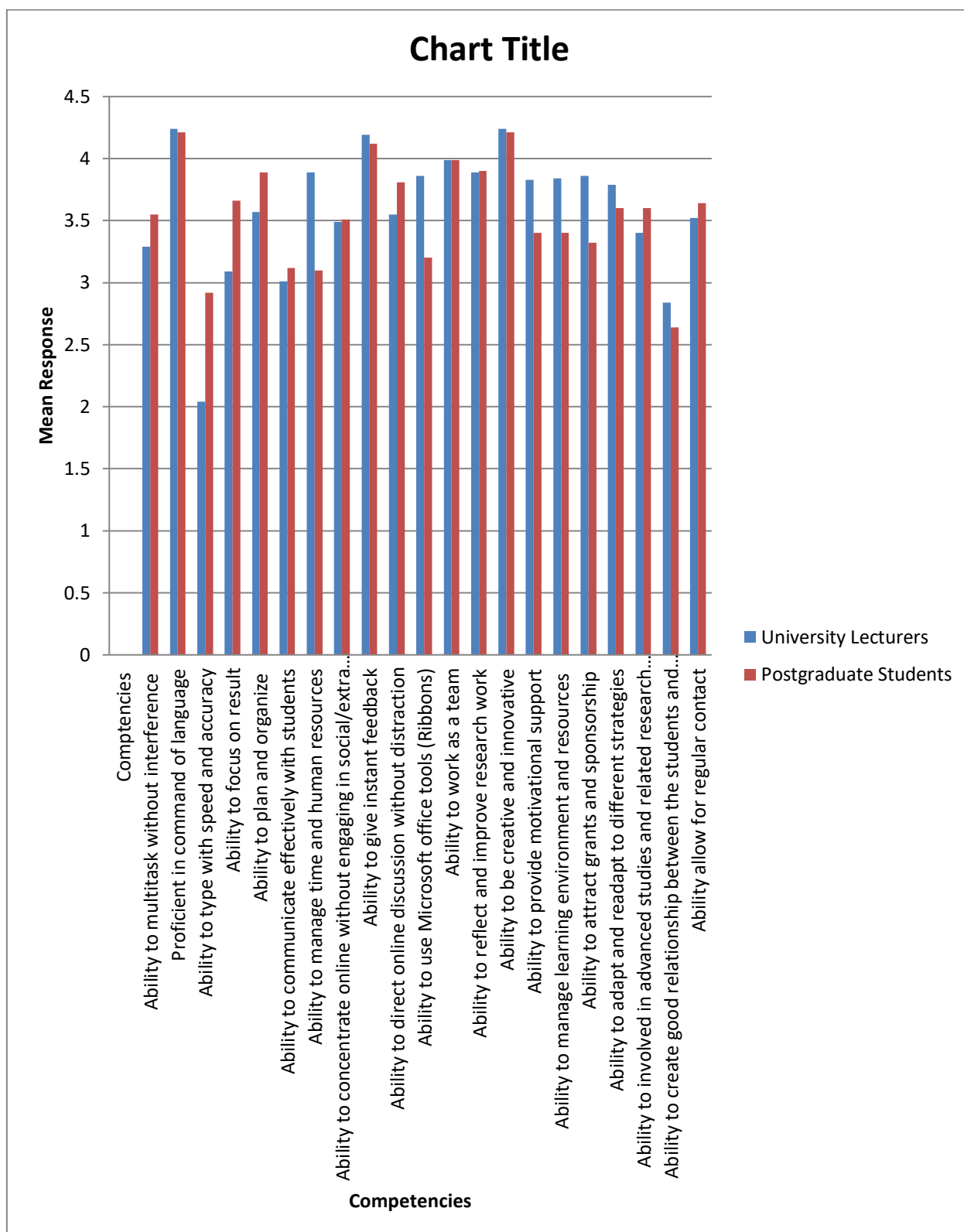
Table 2: shows the responses on the online supervision competencies required by university lecturers and postgraduate students in the post-COVID-19 Era in North East, Nigeria. The respondents indicated that items only items 3 and 20 are not online supervision competencies required by university lecturers and postgraduate students in the post-COVID-19 Era in North East, Nigeria.

C. Research Question Three:
What are the supervisors' expectation on their supervisees in the post COVID-19 era in North East, Nigeria?

	ITEMS $N_L = 82$, $N_{PS} = 33$	$\overline{x}_l$	$\overline{x}_{ps}$	$\overline{x}_G$	σG	Remark
1.	Interested in the research work	3.48	3.52	3.50	0.74	Agreed
2.	Knowledgeable	4.12	4.19	4.16	0.88	Agreed
3.	Disciplined	4.05	4.03	4.04	0.20	Agreed
4.	Diligent, dedicated, and hard working	3.09	3.66	3.38	0.48	Agreed
5.	Teachable	3.89	3.57	3.73	0.48	Agreed
6.	Energetic, keen, tenacious, conscientious	3.10	3.04	3.07	0.48	Agreed
7.	Have a sense of urgency	4.12	4.20	4.16	0.88	Agreed
8.	Enthusiastic and motivated towards research work	3.40	3.84	3.62	0.60	Agreed
9.	Pleasant at work and contribute to a good work environment	3.49	3.51	3.50	0.74	Agreed
10.	Taking advice from the supervisors	3.20	3.86	3.53	0.49	Agreed
	Group Mean			3.67		Agreed

Table 3: Mean and Standard Deviation of Lecturers and Postgraduate Students on Supervisors' Expectations on their Supervisees

$\overline{x}_l$ = *Mean of Lecturers*, $\overline{x}_{ps}$ = *Mean of Postgraduate Students*, $\overline{x}_G$ = *Grand Mean*, σG = *Standard deviation* n_l = *Number of Lecturers*, n_{ps} = *Number of Postgraduate Students*, n =Total Number of Respondents*
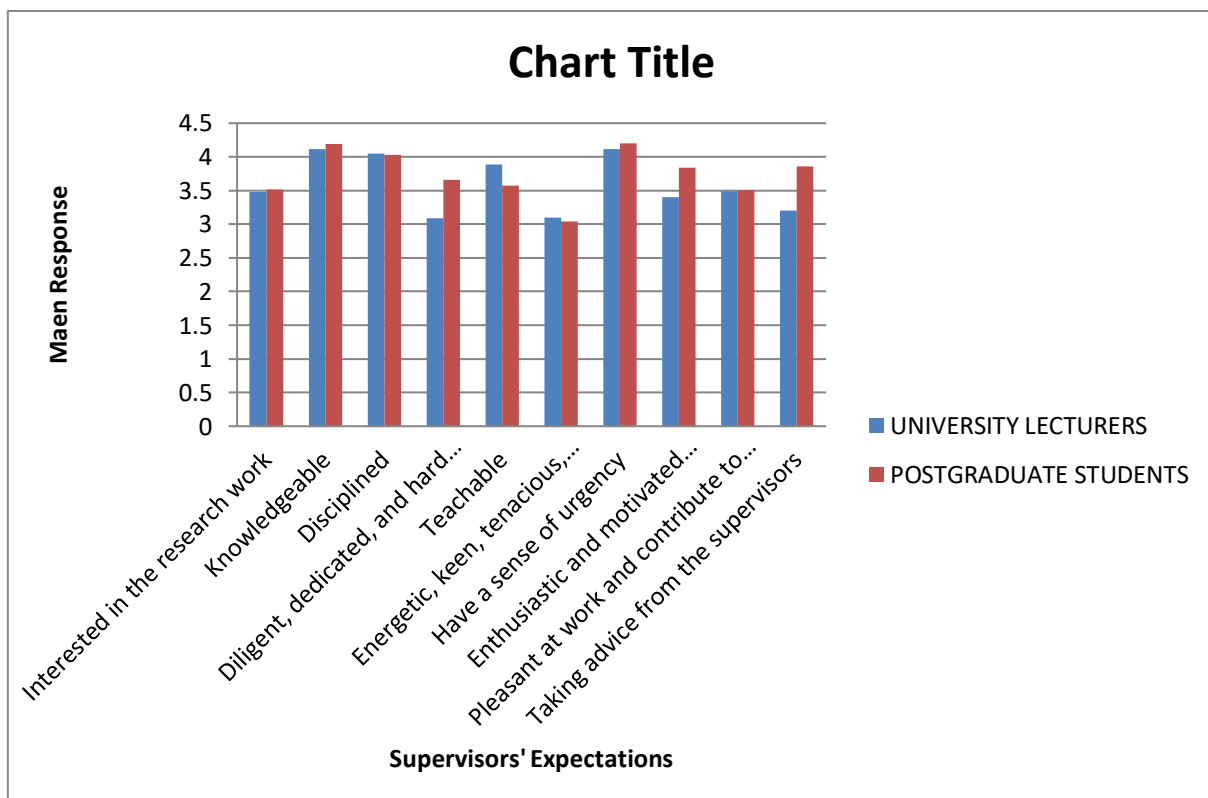

Table 3 shows the responses for the supervisors' expectations on their Postgraduate students in the post-COVID-19 Era in North East, Nigeria. The respondents indicated that all the items 1 – 10 are Supervisors' expectations on their Postgraduate students in the post-COVID-19 Era in North East, Nigeria with mean responses range 3.07 to 4.16 and standard deviation of which also ranges between 0.20 to 0.88 respectively.

- **Hypothesis One:** There is no significant difference between the mean responses of Lecturers and Postgraduate students on the online supervision tools competencies required by university Lecturers and Postgraduate students in the post- COVID-19 era in North East, Nigeria

Respondents	N	Mean	σ	Df	P – value	Remark
Lecturers	82	3.91	0.19			
				74	0.575	Not Significant
PG Students	33	3.88	0.19			

Table 4: t-test Statistical Analysis of Difference between the Mean Responses of the Lecturers and Postgraduate Students on the online supervision tools competencies

P >0.05 N= Number of respondents, σ = Standard Deviation

Table 4 is the result obtained when hypothesis one was tested at 0.05 level of significance. The p-value stood at 0.575. Since the p-value is greater than the α-value of 0.05, implies that there is no significant difference in the mean response of Lecturers and Postgraduate students on the online supervision competencies required by university Lecturers and Postgraduate students in the post- COVID-19 era in North East, Nigeria.The null Hypothesis, is therefore upheld.

- **Hypothesis Two:** There is no significant difference between the mean responses of Lecturers and Postgraduate students on the online supervision competencies required by university Lecturers and Postgraduate students in the post- COVID-19 era in North East, Nigeria

Respondents	N	Mean	σ	df	P – value	Remark
Lecturers	82	3.96	0.35			
				74	0.726	Not Significant
PG Students	33	3.93	0.40			

Table 5: t-test Statistical Analysis of Difference between the Mean Responses of the Lecturers and Postgraduate Students on the online supervision competencies

P >0.05 N= Number of respondents, σ = Standard Deviation

Table 5 is the result obtained when hypothesis one was tested at 0.05 level of significance. The p-value stood at 0.726. Since the p-value is greater than the α-value of 0.05, implies that there is no significant difference in the mean response of Lecturers and Postgraduate students on the online supervision competencies required by university Lecturers and Postgraduate students in the post- COVID-19 era in North East, Nigeria. The null hypothesis, is therefore upheld.

- **Hypothesis Three:** There is no significant difference between the mean responses of Lecturers and Postgraduate students on what the supervisors expect from their supervisees in the post COVID-19 era in North East, Nigeria?

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Respondents	N	Mean	σ	df	P – value	Remark
Lecturers	82	3.96	0.35			
				74	0.546	Not Significant
PG Students	33	3.93	0.40			

Table 6: t-test Statistical Analysis of Difference between the Mean Responses of the Lecturers and Postgraduate Students on the supervisors' expectation on their student

P >0.05 N= Number of respondents, σ = Standard Deviation

Table 6 is the result obtained when hypothesis one was tested at 0.05 level of significance. The p-value stood at 0.575. Since the p-value is greater than the α-value of 0.05, implies that there is no significant difference in the mean response of Lecturers and Postgraduate students on the online supervision competencies required by university Lecturers and Postgraduate students in the post- COVID-19 era in North East, Nigeria online supervision tools competencies required by university lecturers and postgraduate students in the post-COVID-19 Era in North East, Nigeria. The null hypothesis, HO_3, is therefore upheld.

VII. FINDINGS OF THE STUDY

- Microsoft office, dropbox and video conferencing were among online supervision tools – competencies required
- The respondents agreed that ability to plan and organize and ability to manage time, and human resources were among the online competencies required, but agreed that ability to type with speed and accuracy is not necessary.

- The respondents agreed that, interest in the research work, discipline and knowledgeof the subject matter are necessary for research work
- There is no significant difference between the mean responses of Lecturers and Postgraduate students on the online supervision tools competencies required by university Lecturers and Postgraduate students in the post- COVID-19 era in North East, Nigeria
- There is no significant difference between the mean responses of Lecturers and Postgraduate students on the online supervision competencies required by university Lecturers and Postgraduate students in the post- COVID-19 era in North East, Nigeria
- There is no significant difference between the mean responses of Lecturers and Postgraduate students on what the supervisors expect from their supervisees in the post COVID-19 era in North East, Nigeria?

VIII. DISCUSSION OF FINDINGS

The study determined the online supervision competencies required by University Lecturers and Postgraduate Students in the Post-Covid-19 Era in North East Nigeria. The findings revealed that there was no significant difference between the mean responses of Lecturers and Postgraduate students on the online supervision tools competencies, online supervision competencies required and the expectations of supervisors from their supervisees by university Lecturers and Postgraduate students in the post- COVID-19 era in North East, Nigeria. The finding agrees with Alaibe 2014 which asserted that graduates should be creative in skills work, ability to design structures and acquire professional training and computer competencies. The result of testing the hypotheses show that the difference between the lecturers and postgraduate students responses is not significant in mean ratings of online supervision tools competencies, online supervision competencies and the expectations of supervisors on their supervisees. This is an indication that both groups agreed to all the items as necessary requirement for online supervision competencies in Post-covid-19 Pandemic era in Universities in North East Nigeria.

IX. CONCLUSION

In view of the findings of the study, the following conclusions are drawn. The online supervision competencies and online supervision tools competencies are required highly by university lecturers and postgraduate students in the post-Covid-19 era in North East Nigeria. The supervisors' expectation on their supervisees in the post COVID-19 era in North East, Nigeria were also found out.

X. RECOMMENDATION

Based on the findings, the study recommended the following:

- University trainings funded by donor-agencies such as ICDL by Tetfund and Advanced Digital Appreciation Programme for Tertiary Institutions (ADAPTI) by Digital Bridge, an upshot of NCC should expose the University Lecturers to the various online supervision competencies andtools competencies for upmost resourcefulness.
- University administrators should partner with the ICT Units in the universities to provide more training to Lecturers and Postgraduate students in order to enhance their competencies
- There should be Governmental and Non-Government Organisations' intervention programmes targeted towards upgrading the computer skills of both the Lecturers and Postgraduate students are given in-service training for effective upgrade of the skills possessed online supervision.
- self-development programme are recommended for both the Lecturers and Postgraduate students through online and offline mediums

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