Assessing Technostress Among Open and Distance Learning Practitioners: A Comparative Study

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ABSTRACT

This study is a comparative analysis of technostress among Open and Distance Learning (ODL) practitioners, specifically ODL practitioners from National Open university of Nigeria (NOUN) and Shanghai Open University (SOU). Technostress is defined as a modern condition of adaptation caused by inability to cope with computer technology in a healthy manner. It manifests itself in two distinct but related ways: in the struggle to accept computer technology and in the more specialized form of over identification with computer technology. The study raised four objectives that sought to compare the level of technostress among NOUN course facilitators/student and those from SOU to ascertain the influence of gender and age on manifestation of technostress among participants. Technostress Rating Scale (TRS), a 29-item Likert-type scale was administered to a total of 458 participants made up of course facilitators and students from the two Universities. TRS was also translated into China to accommodate the Chinese respondents. Findings shows that: (a) course facilitators from National Open University of Nigeria obtained statistically significant higher scores on techostress than those from Shanghai Open University, China; (b) students from National Open University of Nigeria manifested statistically significant higher level of technostress than those from Shanghai Open University, China; (c) there were no significant gender differences on the manifestation of technostress among participant; (d) age of participants significantly influenced manifestations of technostress. It was argued that we cannot underplay the importance of individual wellbeing in our quest for the use of ICT in ODL. The expectation is that studies like these will help stimulate policies geared towards the protection of users of ICT.

***Keywords**: Technostress, Open and Distance Learning, ICT, China, Nigeria.*

INTRODUCTION

The global world currently basks in the euphoria of Information Communication Technology (ICT). We talk, tweet, and text on cell phones; work, learn, shop, and entertain ourselves on computers and internet; and eagerly await the next new thing, whether hardware or software that will emerge from the innovative minds of ICT engineers and designers around the world. Prior to this era, the utilization of advanced technology was limited to manufacturing and production companies, with much lower rates of utilization in other area such as offices and in the educational sector. Today, it is hard to find a corner of our lives that is not affected by technology. We are surrounded by it at home, at work, at school and in our leisure time. Thus such new technologies appear to have set the conditions for social change and progress, which in this case, advancement in the relatively new mode of education – the Open and Distance teaching and learning.

Open and Distance Learning refers to approaches to learning that focus on freeing learners from constraints of time and place, while offering flexible learning opportunities. For many students, open and distance learning (ODL) is a way of combining work and family responsibilities with educational opportunities. Teaching in ODL is conducted by someone geographically removed from the learner, with all or most of the communication between teachers and learners being conducted through electronic or print media (UNESCO, 2003). It is important to note that the idea that teaching and learning can successfully take place through the support of modern Information and Communication Technology (ICT), between teachers and students widely separated by space and time. ODL is therefore a concept that has continued to inspire hope and excitement, but at the same time, dismay. As the challenges of open and distance learning grow in various institutions around the world, the academic experience changes for an increasing number of instructors and students.

In line with these changes, the job requirement of course facilitators, for example, include among many, continuous use of the computer technologies and adjustment to new software; reliable access to the internet; be online and available for students almost all the time; posses skills required for posting and commenting on students assignment online. In addition to this, he or she grapples with unforeseen computer-related challenges such as periodic virus attacks and loss of data, loss of internet access, power outage and the cost of buying and maintaining a personal computer. In the case of the students, their success and readiness for ODL is measured using several indices of which important ones are ability to use ICT gadgets, access to internet connectivity, ability to download their course materials online, work on their computer marked assessment, and join the discussion forum. Just like facilitators, students also grapple with high cost of buying and maintaining a personal computer as well as the hazards of virus attacks.

In this era of rapid growth and challenges, education seems to be a tool for human adjustment, thus there is the need for an embrace of Open and Distance Learning for access and equity in education. Closely associated with ODL is the use of ICT in teaching and learning. Previous examples indicate that this very crucial supportive technology for ODL could also trigger technostress on users. The term technostress was coined in 1984 by a clinical psychologist, Dr. Craig Brod who conceptualized it as “a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner. It manifests itself in two distinct but related ways: in

the struggle to accept computer technology and in the more specialized form of over identification with computer technology" (Brod, 1984). Tarafdar, Tu, Ragu-Nathan, and Ragu-Nathan (2007) identified five components of technostress, which are also known as technostress creators. They are:

- *Techno-overload*: Access to a huge amount of information is one thing, processing it is quite another.
- *Techno-invasion*: while technology such as e-mail, cell phones, texts, tweets and status updates has made it easier to stay in touch, these communications are sometimes invasive, intrusive and impinge on our ability to concentrate and work uninterrupted.
- *Techno-complexity*: when one considers the rate at which technological change is occurring and the requirements of learning new operating systems, new software programs, new ways of processing data, new hardware, it is easy to see why rapid changes in technology can be stress-inducing.
- *Techno-insecurity*: this can be of dual perspectives; insecurity can be as a result of individuals feeling threatened that they will lose their jobs, either being replaced by new ICT or by other people who are better in ICT compared to them. The other dimension is the vulnerability and security threat experienced due to massive personal information available on the internet.
- *Techno-uncertainty*: this is a situation where ICT users feel uncertain and unsettled since ICT is continuously changing and need upgrading.

STATEMENT OF THE PROBLEM

With a professional background in Clinical Psychology, I take keen interest in observing people and situations around me and identifying issues that could present as problems if not properly managed. Thus, I took up the role of a participant observer at my workplace, which is an Open and Distance Learning environment. Staring at computers a good part of the day, I realised that my eyes were gradually being negatively affected by computer use. I found myself experimenting with different types and shades of eye glasses for respite. Also, there is a constant fear of virus attack on the system that leaves us feeling apprehensive. I noticed that for new staff, especially those not proficient in computer usage, adjusting to ICT could be quite upsetting because they appear slow and 'inffective'. The additional task of being online for students 24 hours a day, being available to respond to their never ending calls and text messages a good part of the day, constantly updating and adjusting to new software, and the cost of owning a personal computer as well as maintaining it could be quite challenging. Inclusive also is the issue of poor typing skill experienced by many, interrupted power supply and the cost of maintaining a back-up power in the developing world exerts physical and economic pressure on many course facilitators. I have also observed students present technology-related concerns. Recurring complaints include: poor access to internet, high cost of maintaining and owning a personal computer, sustaining a back-up power supply, poor speed of uploading, downloading and managing files, poor typing skill, etc.

Thus, in order to sustain the wellbeing of individuals concerned, it is important to recognize the impact of technology (ICT) on the physical and mental health of users, because these could easily be taken for granted or de-emphasized in our quest to

understand, enjoy, apply or use the computer to attain our individual and collective goals. It is hoped that this study could help stimulate policies geared towards improved training and protection of users of ICT.

THEORETICAL AND EMPIRICAL REVIEW OF LITERATURE

Davis (1989) posits that the Technology Acceptance Model (TAM) based on the theory of Reasoned Action (Fishbein & Ajzen, 1975) suggests that acceptability of a tool and modifications must be brought to the system in order to make it acceptable to users. This model suggests that the acceptability of an information system is determined by two main factors: perceived usefulness and perceived ease of use. Many authors have refined the Technology Acceptance Model, trying to find the latent factors underlying perceived ease of use and perceived usefulness. A notable refinement of the Technology Acceptance Model (TAM) is proposed by Mcfarland and Hamilton (2006). Their model assumes that 6 contextual variables (prior experience, use by others, computer anxiety, system quality, task structure, and organizational support) affect the dependant variable system usage through 3 mediating variables (computer efficacy, perceived ease of use and perceived usefulness). The model also postulates direct relations between the external variables and system usage.

Empirical research posits that individuals may experience higher levels of adrenaline and nor-adrenaline during work periods with computers (Arnetz & Berg, 1993). Masey and Stedman (1995) showed that the increase in demands for technology was among the main attributing factors to added work stress. They pointed out that stress is inherent in technology: through (a) client expectation; (b) aggressive marketing schemes from software manufacturers; and (c) desire to always be on the cutting edge of technology. Hamborg and Greif (2009) reviewed the results of cross-sectional and longitudinal studies on new technologies and stress. They noted that there is “no definite support for the simple assumption that the computer technologies per se might exert stress” (2003). Instead, they suggested that stress symptoms are mostly found along with malfunctions of systems, poor ergonomic designs of hardware, software problems, lack of proper training prior to implementation, and inadequate implementation procedures.

Agbu and Ojo (2011) in their study of technology stress among ODL staff and bank workers found that ODL staff manifested significantly higher levels of technostress than the employees from the banking sector. There were no gender differences in the manifestations of technostress and a positive correlation between computer hassles and stress reactions was recorded. In a related study, Agbu and Olubiyi, (2011) assessed the influence of e-learning environment on the manifestation of technology stress among academic and non-academic staff of an Open and Distance Learning. Results showed that academic staff manifested significantly higher levels of technostress than the non-academics; older participant manifested higher level of technostress than younger respondents and no statistically significant differences were observed on the male and female scores on technostress. Agbu (in press) in another study sought to determine the correlation between technostress and psychophysiological manifestation. Findings reported a positive correlation between technostress and psychophysiological symptoms. Such symptoms include irritation, headache, poor vision, digestive problem, and restlessness. In the same study, a manifestation of technostress was determined between ODL participants and those drawn from a conventional university. The study was carried out on 742 participants made up of 298 (ODL students); 253 (conventional university

students); 100 (ODL academic staff) and 91 (conventional university academic staff). Result indicates that (a) ODL students obtained statistically significant higher scores on technology stress and psycho-physiological manifestation than students from conventional university (b) ODL lecturers exhibited significant higher scores on technology stress and psycho physiological manifestations than their counterparts from conventional university (c) There were no significant differences in the exhibition of technology stress and psycho-physiological manifestations among male and female participants. In an interview conducted, respondents often use the words as 'shock', 'surprise', or 'drastically underestimated' when describing how much time they and their colleagues spent on e-learning relative to their traditional face-to-face courses. Other triggers of technostress for ODL course facilitators include giving students feedback online, meticulous preparation of course material that are usually online and thus in public domain, adjusting to new and 'more effective' technology for online facilitation, lack of technology proficiency – confusion when operating software as well as lack of awareness when the server crashes (Arabsasz, Purani & Fawcett, 2003).

In a bid to contribute to ongoing research in the area of technostress, the present study presents a comparative analysis of technostress manifested among participants drawn from National Open University of Nigeria and Shanghai Open University. The study therefore raises the following research objectives, questions and hypotheses.

OBJECTIVE OF THE STUDY

The general objective of this study is to provide a comparative analysis of technostress amongst ODL practitioners in National Open University of Nigeria (NOUN) and Shanghai Open University, China.

Specific objectives of this study include:

1. To compare the level and manifestations of technostress among NOUN and SOU, ODL course facilitators
2. To compare the level and manifestations of technostress among NOUN and SOU, ODL students
3. To ascertain the influence of gender on the manifestation of technostress among participants
4. To ascertain the influence of age on the manifestation of technostress among participants

RESEARCH QUESTIONS

1. Will there be differences in the manifestations of technostress among course facilitators from National Open University of Nigeria (NOUN) and those from Shanghai Open University (SOU)?
2. Will NOUN students manifest higher levels of technostress than SOU students?
3. Will gender significantly influence manifestations of technostress among participants?

4. Will age significantly influence manifestation of technostress among participants?

RESEARCH HYPOTHESES

1. Course facilitators drawn from National Open University of Nigeria will manifest higher levels of technostress than those from Shangai Open University, China
2. Students from National Open University of Nigeria will manifest higher level of technostress than their counterpart from Shaghai Open University, China
3. Females will manifest higher level of technostress than males
4. Older participants aged (41-60) will manifest higher level of technostress than younger participants aged (below 20 – 40)

METHODOLOGY

Participants: A total of 458 participants were employed for this study. 49 (10.%) were NOUN course facilitators, 22 (4.80%) were SOU course facilitators, 321 (50.44%) were students drawn from NOUN while 156 (34.06%) were SOU students.

Instrument: Technostress Rating Scale (TRS) was used for this study. This is a 29-item scale developed by Agbu (2013). Each item is a statement which participants were required to respond to on a four-point Likert-type scale ranging from 4: (strongly agree) to 1: (strongly disagree). Specifically, TRS taps into the emotive, cognitive, behavioural and physiological manifestations of ICT-related anxiety and stress. Normative score for TRS were 79.71 for females, 82.64 for males and 81.15 for males and females collectively (using Nigerian sample). TRS presented a concurrent validity of .53, a 14-day test-retest reliability coefficient of .79, split-half reliability coefficient of .74, a Cronbach-alpha reliability coefficient of .76.

Procedure: This study was carried out in Nigeria and Shanghai China. With the aid of research assistants, data was collected using Technostress Rating Scale (TRS). TRS was administered to participants drawn from Shanghai Open University, China and National Open University of Nigeria. A research assistant based in Shanghai Open University (International Exchange Programme unit) helped to translate the TRS into Chinese, for the Chinese respondents, under close supervision of the researcher. The translated version was administered to the Chinese participants with the aid of Chinese research assistants while those for NOUN was administered by the research and few research assistants based in NOUN. A total of 500 questionnaires were distributed but 458 were found usable making 91.6% of the questionnaire adequate for the study. A purposive sampling technique was used in identification of participants. The questionnaire responses were further collated and scored accordingly.

Scoring: Scores for TRS were obtained through direct and reverse scoring methods. The negatively-worded items were subjected to direct scoring method of which values of numbers shaded on them were added together. Item 25 was positively-worded and was scored with reverse scoring method by changing numbers 1, 2, 3, 4, to 4, 3, 2, 1 respectively.

Data Analysis: The Statistical Package for Social Sciences (SPSS) was used for statistical analysis. The statistical methods used were Mean (X), Standard Deviation, t-test and ANOVA

RESULTS

The study presented four hypotheses which were tested and findings presented in tables below.

Table 1: Mean, Standard Deviation and t-test of NOUN and SOU Course facilitators on TRS.

Course Facilitators		No	Mean	Std. Deviation	t-test	Sig (2-tailed)
TRS	NOUN	49	80.63	9.03	2.48**	.016
	SOU	22	74.18	12.35		

Note: ** Correlation is significant at the .05 level (2-tailed), TRS:Technostress Rating Scale; df = 69, Critical t = 1.66

Results in Table 1 shows that NOUN course facilitators obtained higher mean score on techostress rating scale than their counterparts from Shanghai Open University. In order to ascertain if the obtained score was statistically significant, the t-test statistics was computed. Result shows that the t-test was statistically significant @ probability level of .05. Therefore hypotheses 1 that states that: course facilitators drawn from National Open University of Nigeria manifest higher levels of technostress than those from Shangai Open University is accepted. In order to test hypothesis 2 that states that: students from National Open University of Nigeria will manifest higher level of technostress than their counterpart from Shaghai Open University, the mean, standard deviation and t-test score is computed and presented in Table 2.

Table 2: Mean, Standard Deviation and t-test of NOUN and SOU Students on TRS

Students		No	Mean	Std. Deviation	t	Sig (2-tailed)
TRS	NOUN	231	81.86	10.66	7.80**	.000
	SOU	156	72.27	13.47		

Note: ** Correlation is significant at the .05 level (2-tailed), TRS:Technostress Rating Scale; df = 385, Critical t = 1.66

Result presented in Table 2 shows that students from National Open University of Nigeria manifested higher levels of technostress than those from Shaghai Open University. The t-test result shows that the observed differences are statistically significant and this confirms hypothesis 2. In order to ascertain the influence of gender on the manifestations of technostress among participants, the mean, standard deviation and t-test statistics are computed and presented in Table 3.

Table 3: Mean, Standard Deviation and t-test of NOUN and SOU Male and Female Participants on TRS

Gender		N	Mean	Std. Deviation	t-test	Sig (2-tailed)	t-Table value	df	Description
TRS	Male	78	70.64	13.27	1.59	.114	1.66	175	SOU male and Female
	Female	99	73.83	13.24					
TRS	Male	113	81.37	11.33	.68	.50	1.66	229	NOUN male and female
	Female	118	82.33	9.99					
TRS	Male	191	76.99	13.23	1.16	.25	1.66	406	SOU and NOUN male and female
	Female	217	78.45	12.31					

Note: ** Correlation is significant at the .05 level (2-tailed), TRS:Technostress Rating Scale

Result in Table 3 presented findings on manifestation of technostress among male and female participants (course facilitators and students). In the first row of Table 3, it was discovered that male participants of Shanghai Open University obtained lower mean scores on technostress than the their female counterparts; however the t-test result shows that the differences observed are not statistically significant. The second row of Table 3 that sought to ascertain the differences in the manifestation of Technostress among NOUN male and female participants revealed that male participants obtained lower mean scores on technostress than the females. However the t-test result shows that the differences observed are not statistically significant. However the last row of Table 3 presents overall findings of NOUN and SOU male and female participants on manifestations of technostress. Result show that male participants obtained lower mean scores on technostress than the females. However the t-test result shows that the differences observed are not statistically significant. Therefore the hypotheses state that females will manifest higher level of technostress than males were not confirmed. In order to ascertain influence of age on the manifestation of technostress among participants, the mean, standard deviation of the scores are presented in Table 4.

Table 4: Mean, Standard Deviation of Influence of Age on Manifestation of Technostress Among SOU and NOUN Participants

Measure	Age	Mean	No	Std. Deviation	Description
Technostress Rating Scale	21-30	71.44	121	14.24	Age – SOU Participant
	31-40	73.41	46	10.37	
	41-50	79.00	10	11.08	
	51-60	95.00	1	–	
	Total	72.51	178	13.32	
Technostress Rating Scale	21-30	81.74	159	11.57	Age – NOUN Participants
	31-40	84.43	89	8.31	
	41-50	82.34	42	10.18	
	51-60	75.94	16	4.19	
	Total	82.31	306	10.38	
Technostress Rating Scale	21-30	77.29	280	13.76	Age – NOUN and SOU Participants
	31-40	80.67	135	10.44	
	41-50	81.71	52	10.33	
	51-60	77.06	17	6.15	
	Total	78.70	484	12.46	

Results presented in Table 4 show mean and standard deviation scores of age range of participants who have experienced on Technostress. In the mean score of SOU participants in Table 4, it was discovered that those in the age range of 51-60 obtained highest mean scores while those in the age range of 21-30 obtained lowest mean score on Technostress. The second row of Table 3 identified the mean score of NOUN participants on Technostress. Results revealed that those in the age range of 31-40 years obtained highest mean score on Technostress while those in the age range of 51-60 obtained lowest mean score. However, the overall scores of NOUN and SOU participants were presented in the last row of Table 4. Result showed that those in the age range of 41-50 scored highest mean score of Technostress while those aged 51-60 obtained the lowest scores.

In order to ascertain if the observations in Table 4 are statistically significant, the one-way-Analysis of Variance (ANOVA) statististisc was used and result is presented in Table 5.

Table 5: One Way ANOVA for the observed scores

Measure		Sum of Sqaures	df	Mean Sqaure	F	Significance	F-Table Value	Description
TRS	Between Groups	1103.56	3	367.85	2.11	.10	2.70	SOU
	Within Groups	30284.94	174	174.05				
	Total	31388.50	177					
TRS	Between Groups	1101.18	3	367.03	3.49	.02**	2.70	NOUN
	Within Groups	31751.26	302	105.14				
	Total	32852.34	305					
TRS	Between Groups	1603.54	3	534.51	4.49	.02**	2.70	SOU and NOUN staff
	Within Groups	73434.42	480	152.99				
	Total	75037.96	483					

Note: ** Correlation is significant at the .05 level, TRS:Technostress Rating Scale, Critical F = 2.70

The ANOVA summary Table above was used to ascertain if the observed mean scores on technotress (see Table 4) are significant among participants. The first row of Table 5 was used to identify significant differences among scores obtained from SOU participants. Results show that the observed mean differences are not statistically significant at .05. Results for the NOUN participants on the influence of age on Technostress in Table 5 show that the observed differences are statistically significant at .05. Row three of Table 5 was however used to determine the statistical significant of influence of age on Technostress among NOUN and SOU participants cumulatively. It was observed that the observed mean differences were statistically significant at .05. Therefore hypotheses 4 that states that older participants aged (41-60) will manifest higher level of technostress than younger participants aged (below 20 – 40) is accepted.

DISCUSSION AND CONCLUSSION

Open and Distance learning mode is a veritable tool for reaching the unreached in the area of educating vast majority of people that naturally would not have had opportunities to study due to constraints of conventional face-to-face learning. In so doing, it has contributed immensely in increasing access and equity in education. Observation shows that as students and facilitators alike continue to embrace this form of education world-wide, they grapple with the use, adjustment and maintenance of the very crucial work and study tool for ODL which is the Information Communication Technology (ICT). It is however our duty as educators, researchers and observers to emphasize these challenges that are often-times ignored in our quest to understand, enjoy, apply or use the computer to attain our individual and collective goals. It is hope that studies like

these will help stimulate empathic measures geared towards ameliorating the impact of ICT on our work, learning, leisure and other spheres of life.

This study was born out of researchers' observations of students and facilitators in the course of her job as an ODL facilitator. Initial studies in this area reported high level of technostress among ODL facilitators and students (Agbu & Ojo, 2011; Agbu and Olubiyi, 2011). Observations from these studies motivated interest in the present study due to the fact that findings were based on studies carried out in Nigeria and thus the need to add a foreign twist to it. The aim is to ascertain, if any, differences in manifestation of technostress among Nigerian sample and participants from China. The following are summary of findings:

1. Course facilitators from National Open University of Nigeria obtained statistically significant higher scores on techostress than those from Shangai Open University.
2. Students from National Open University of Nigeria manifested statistically significant higher level of technostress than those from Shaghai Open University.
3. There were no significant gender differences in the manifestations of technostress among participants. Specifically, no significance gender differences were observed among SOU participants, none on NOUN participant and none on overall score of participants (i.e., SOU and NOUN cumulatively).
4. Age of participants significantly influenced manifestations of technostress. It was observed that older participants (41-60) recorded higher level of technostress than younger ones (20 – 40).

From the findings, it was deduced that course facilitators from National Open University of Nigeria obtained statistically significant higher scores on technostress than those from Shangai Open University. It was also reported that students from NOUN manifested higher level of technostress than those from SOU. Was these findings expected? The researcher was fortunate to spend two weeks in Shanghai Open University China, carrying out this study to observe and interview and found that: Staff are exposed to training once a year to update their IT skills; New students are made to take a compulsory course on ODL and technology; Disks and tapes for all e-resources are neatly stored in file cabinets at the Educational Resource Center with computer screens attached to each cabinet to aid access to e-learning resources. Also the use of micro-videos as introductory overview for each course was produced for students to aid learning. Of utmost interest is the existence of ICT demonstration laboratory where all ICT software and hardware are subjected to rigorous experimentation before use.

It is important to note that National Open University of Nigeria has variants of such ICT-related measures in place of which include periodic ICT training for staff, online ICT training for students at commencement of any new e-programme for example, Computer Marked Assignment, e-Exam, NOUN-iLEARN. There is also the existence of Computer 101 which is compulsory for almost all first year students. So what then could have caused the discrepancy in NOUN and SOU's result? Could it be that participants from Africa still view ICT technology as an alien object and thus more apprehensive to embrace it as a work and learning tool? What of the peculiarities of their environment? Interrupted power supply and high cost of maintaining back-up power, damages to computers due to light fluctuation, high cost of buying and maintaining up-to-date ICT gadgets which are imported from Asian and Western worlds. Inclusive are high cost of

antivirus software, need for periodic personal update of computer skill, poor internet connectivity as well as high cost of maintaining an internet access. This indicates that course facilitators and students from Africa, unlike their counterparts from Asia and Western worlds appear to have added burden identified above in their quest to use ICT in the work and learning environment.

Results from this study further indicate that there were no significant gender differences in the manifestations of technostress among participant. Specifically, no significance difference was observed among SOU participants, none on NOUN participant and none on overall score of participants (i.e., SOU and NOUN cumulatively). This finding is in tandem with Raja, Azlina and Siti (2007); Agbu and Olubiyi (2011) study on techno stress wherein no significant differences were observed among male and female respondents on technostress. This is not surprising because the global challenges are triggering competition and gender role reversal, thus both males and females grapple with similar experiences and challenges even in learning.

Result further revealed that age significantly influence manifestations of technostress among participants. It was observed that older participants (41-60) recorded higher level of technostress than younger ones (20 – 40). It is not an anomaly to assume that the low scores obtained by the younger respondent is an indication of acceptance and comfort with the ICT. Those in this age range could be described as 'digital natives' as opposed to 'digital immigrants' (Prensky, 2001). Prensky defines digital native as a person who understands the value of digital technology and uses this to seek out opportunities for implementing it. A digital immigrant on the other hand is described as an individual who was born before the existence of digital technology and adopted it to some extent later in life. It is however not surprising that older respondent manifesting more technostress than the younger could be as a result of the pressure to adjust and change to the new information communication technology.

In line with the findings, the study recommends the following:

- Policy measures in ODL should strive to sustain an ever-present system of training and education using effective technologies.
- ODL institutions should aim to adopt user friendly hardware and software with provision for adequate training for the staff and students.
- ODL institutions and administrators should create a better communication channel within the work environment as well as encourage improved levels of reassurance, patience and stability within the institution. This is because the practice and expectations of ODL work requires full concentration and borderless time which can be taxing on individuals emotionally and physiologically.
- Instructors and students of ODL should be encouraged to undertake regular exercise routines to counter bodily strains related to the wrists, waist and eyes.
- ODL students should be encouraged to use only body and eye-friendly computers that are not detrimental to their wellbeing.
- Digital immigrants should be open-minded, and gradualist in their desire to understand and use computer technology.
- ODL institutions should be tolerant of new entrants into the ODL System, as it will take some time for them to adjust, in order not to trigger technostress.

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