

Teachers' Management of Stress Using Information and Electronic Technologies

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ABSTRACT This study was designed to examine the statistical gender, academic qualification and marital status differences in primary school teachers' use of Information and Electronic Technologies for stress management. 706 primary school teachers (176 males, and 530 females) with (Mean Age= 34.7; SD = 8.52), from Ogun-East senatorial district of Ogun-state, Nigeria constituted the sample of the study. Meanwhile, three research hypotheses that guided the study were tested at 0.05 level of significance using t-test and Analysis of Variance. Technology Usage and Job Stress Scale was used to collect the data. The results showed that teachers' use of Information and Electronic Technologies for stress management was not gender driven, while academic qualification and marital status of the teachers influenced their use of Information and Electronic Technologies as stress coping strategy. By implication, the findings of this study direct that teachers should be responsive to the increasing technological innovations that serve as preventive and proactive coping strategy that will minimize excess workload that have direct and indirect ripple effects on teachers' mental and physical health as well as quality of education.

INTRODUCTION

Attracting, developing and retaining future teachers as nation builders are major concerns to the various stakeholders in education. In developing nations, there seems to be a shortage of qualified teachers in many schools, while the few ones available are saddled with more than enough workload (Moore 2003). In Nigeria, primary school teachers assigned to classes find themselves planning, preparing and teaching 6 to 8 subjects every day of the week. Nigerian teachers seem to be having a hard bite of the stressful recipe because teaching is experiencing a "political football" game as a result of changes in government, government frequent demands, change in policy and poor pay.

Teaching like other professions involves stress as an inevitable tool of challenges, flavour, and change which adds zest for living. Stress as viewed by Olley (1999) is the psychological, physiological and behavioural response of an individual seeking to adopt and adjust to both the internal and external pressures. Health Information Publications (2005) defines stress as the emotional and physical strain caused by our response to pressure from the outside world. Furthermore, Dalloway (2007) describes stress as an automatic physical reaction to danger, de-

mands or threat. Love and Irani (2007) view stress as the individual's inability to cope with excessive workplace demand or job pressure, while Hartig et al. (2007) presented stress as a process of responding to an imbalance between demand and resources.

The implication of the above definitions is that too much pressures can be placed upon teachers in the schools arising from unnecessary deadlines, attempts to impress boss/employer, administrative tasks, conflicts in the school, attendances at meetings, implementation of new policy, lack of breathing space between lessons, non-availability of time to wind down or relax and recuperate, management of finances, aspiration for greater achievement, overwork, emotional exhaustion, isolation, lack of workers' participation in decision making, poor communication, job insecurity, environmental pollution, large class-size, dealing with different needs of the students, disability and attention-deficit disorder, lack of financial support etc. (Gupta 1981; Ling 1991; Johnstone 1993; King 2002; Calloway 2003; Moore 2003; Abosede 2004; Fields 2005; Georgia Reproductive Specialist 2005). Furthermore, Wright (2008) re-affirms that workplace stress is borne out of attrition and the demand for more in less time by the school system.

Individual demographics such as marital

status and level of educational attainment have been relatively omitted from occupational stress research (Amick et al. 1998). In the opinion of Somerfield and McCrae (2000), significant factors that influence individuals' stress coping behaviour include variables like level of educational qualification and marital status. Empirical finding also indicates that the use of telework as a stress coping strategy differs among people of varying educational category (Mokhtarian et al. 1998, cited in Harting et al. 2007). Similarly, marital status has been researched to have a relationship with individual's ability to cope and manage stressful events through whatever means (Love and Irani 2007).

Charlie (2001) notes that there is gender based differences in teachers' stress. Ahlberg et al. (2003) also allude to the fact that females are more exposed to stress than their male counterparts. According to Abosede (2004), female workers are more stressed because they attempt to strike a balance between professional and home responsibilities. The ripple effect of job stress is the appearance of any of the symptoms listed in table 1.

Abosede (2004) and Smith and Pergola (2006) stress that person's awareness of the level of stress and the coping strategies are more important than the type of pressure one faces in his or her workplace. Mueller (2001) observes that Information and Electronic Technologies (IET) have been sources of great relief in various work places. Teachers' involvement in exercises and relaxation therapies which involve the use of appropriate IET is one of the best approaches to reducing stress in schools (Godfrey et al. 1990; Moore 2005). Panebianco (2003) further emphasizes that media is a natural medicine that entertains and reduces stress because listening

to and watching media after a long busy day is an excellent way to unwind and relax. Dardick (1990) asserts that comedic films and movies are best critical to managing stress. The use of computer instructional programmes such as Computer Assisted Instruction (CAI), Computer Mediated Instruction (CMI), Computer Aided Design (CAD), Computer Assisted Learning (CAL), for teaching and learning process reduce teacher's tension and burden (Calloway 2003; White and Le Cornu 2004). In the same vein, Belisle (2003) and Moore (2005) suggest that teachers' stress could be reduced through the use of radio and web-based system that will assist the teacher to prepare and plan their lessons.

Stress is the "wear and tear" the body experiences as we adjust to continual environment demands, but Panebianco (2003) affirms that teachers' access to videocassettes, television and digital video and newspapers is a bastion of hope and empowering tool that improves human productivity in educational system. Calloway (2003) and Moore (2005) argue that technology machines do things faster and better than human beings; thus reducing anxiety and nervousness. Smooth (2007) beaming light on the potency of technology in stress management asserts the efficacy of smooth technology as a coping strategy to stress reduction. The smooth technology reduces tension and nervousness by allowing the user to breathe deeply while working throughout the day.

Teaching by nature is a highly demanding and complex profession because teachers often juggle between many activities and responsibilities, which generate a high level of stress, fatigue and burnout. One of the ways to deal with this problem is to pay attention to the challenges contributing to the exodus of professionals from teaching and

Table 1: Symptoms of stress among school teachers

<i>Physical</i>	<i>Emotional</i>	<i>Mental</i>	<i>Social</i>
-Headache	-Anxiety	-Forgetfulness	-Isolation
-Teeth grinding	-Frustration	-Poor concentration	-Loneliness
-Fatigue	-Nervousness	-Low productivity	-Lashing out
-Insomnia	-Depression	-Negative attitude	-Clamming up
-Backaches	-Worrying	-Confusion	-Lowered sex drive
-Stomach problem	-Tension	-No new idea	-Lack of commitment
-Colds	-Mood swings	-Less sympathetic	-Nagging
-Neck aches	-Easily discouraged	-Lethargy	-Fewer contact with friends
-Shoulder pains	-Crying spells	-Boredom	-Using people
-Increased use of drugs	-Irritability		-Gossiping over trivial things
-Absenteeism			

Adapted from Suzannah Smith and Joe Pergola 2006

finding lasting solutions to them. Gupta (1981) noted that stressful situations in schools require the use of technology-oriented strategies. Though, teaching in school is a stressful experience, but there is dearth of research on primary school teachers' use of IET to reduce stress. This study therefore examined the influence of some demographic variables on primary school teachers' use of Information and Electronic Technologies in reducing or managing stress.

Hypotheses

The following were hypothesized for this study:

1. The use of Information and Electronic Technologies for stress management among teachers of varying academic qualifications will not be significantly different.
2. The use of Information and Electronic Technologies for stress management between male and female teachers will not be significantly different.
3. There is no significant difference in teachers' use of Information and Electronic Technologies for stress management based on their marital status.

METHOD OF STUDY

Sample: A total of seven hundred and six respondents (176 males, 530 females), (536 married, 170 singles) from Ogun-East senatorial district of Ogun-state, Nigeria constituted the sample for this study. Out of the nine local governments comprising Ogun-East senatorial district, the primary school teachers (Mean Age= 34.7; SD = 8.52), 176 males (24.9%), and 530 females (75.1%) were selected through simple random sampling technique from five local governments.

Instrumentation: The instrument used for data collection was Technology Usage and Job Stress Scale. The instrument was researcher's self-designed. The instrument had 58 items designed to measure the level at which Information and Electronic Technologies use influences teachers' level of stress management. Items of the instrument include "My job leaves me little or no leisure time, yet I find time to read newspaper/magazines to relax myself", "When I feel depressed at work, I cool down by listening to radio programmes". The instrument is rated on a 5-point Likert scale ranging from (Always like me

=5) to (Never like me = 1). The instrument was given to two educational technologists, a specialist in educational management and a psychometrician for content and face validity of the items. Corrections were made to the instrument based on their comments in the production of the final draft. The instrument's reliability coefficient is 0.89

Procedure: The researcher and six-research assistant visited the selected schools in Ogun-East senatorial district of Ogun-State to administer the instrument. The research assistants have been trained on how to properly respond to the items of the instruments and how to solicit for the support of the respondents. The participants attended to the instruments at individual's pace. Some copies of the instruments were retrieved at the first visit, while the remaining ones were collected in the various schools at agreed dates, but all within a period of two months.

Data Analysis: t-test and Analysis of Variance were used to test hypotheses.

RESULTS

The results in the table 2 show the mean and the standard deviation of primary school teachers in Ogun-East senatorial district of the Ogun State, Nigeria. Amongst the teachers, NCE holders had (Mean =142.3065, SD = 33.11502), Bachelor's degree holders (Mean = 148.3065, SD = 33.11502), Associate Certificate in Education (ACE) holders (Mean = 190.0000, SD = .00000) Masters degree holders (Mean = 122.0000, SD = .00000) and Nigerian Teachers' Grade II Certificate holders (Grade II) (Mean = 130.9615, SD 15.91095).

Table 2: Descriptive statistics of primary school teachers by highest academic qualifications

	N	Mean	SD	Std. error
Grade II	56	130.962	15.911	3.12039
ACE	6	190	0	0
NCE	390	142.333	30.4997	2.18413
Bachelor degree	246	148.307	33.115	2.97382
Masters degree	6	122	0	0
Total	706	143.705	30.9768	1.64473

H01: The use of Information Technology and Electronic Technology for stress management among teachers of varying academic qualifications will not be significantly different.

The results in the table 3 reveal that there is a significant difference in teachers' use of

Table 3: Analysis of variance of teachers' use of information technology and electronic technology for stress management

	<i>Sum of squares</i>	<i>df</i>	<i>Mean square</i>	<i>F</i>	<i>Sig</i>
Constant	16088.7	5	3217.74	3.471	0.004
Error	321677	700	927.022		
Total	337765	705			

Table 4: Scheffe post-hoc analysis of primary school teachers' academic qualifications.

<i>Highest academic qualification</i>	<i>N</i>	<i>Subset for alpha =0.05</i>	
		<i>1</i>	<i>2</i>
Grade II certificate	56	130.9615	130.9615
ACE	6		190
NCE	390	142.3333	142.3333
Bachelor degree	248	148.3065	148.3065
Master' degree	6	122	
Sig.			

Information Technology and Electronic Technology as coping strategy for stress management based on academic qualification. This is in view of the fact that the F-ratio of 3.471 was significantly higher than the critical F-ratio of 3.00 at 0.05 level of significance. By implication, teachers' use of IT and EM to manage stress is academic-qualification determined, thus the hypothesis was not accepted.

However, to further determine the level of significance, a post-hoc analysis was conducted and the results were indicated below.

The results in the table 4 show that two subsets were identified. Masters degree, Grade II Certificate, NCE and Bachelor's degree was the first subset, while the second subset includes Grade II Certificate, NCE, Bachelor's degree, and ACE. Teachers with academic qualification in each of the subsets are characterized with the same level of Information and Electronic Technologies use for management of stress. Meanwhile, teachers with the academic qualification in varying subsets have differentials in their use of Information Technology and Electronic Technology to manage stress.

Ho 2: The use of Information and Electronic Technologies for stress management between male and female teachers will not be significantly different.

The results above clearly indicate that between male and female teachers, there exists no significant difference in the use of Information and Electronic Technologies as stress coping strategy in view of the fact that the calculated value of .751 is lower than the critical table value

of 1.98. Therefore, the hypothesis was not rejected. Thus, this implies that teachers' use of Information and Electronic Technologies for stress management is not gender driven.

Ho3: There is no significant difference in teachers' use of Information and Electronic Technologies for stress management based on their marital status.

The results shown above reveal that there is a significant difference in teachers' use of Information Technology and Electronic Technology for stress management based on their marital status because the calculated value of 2.502 is greater than the critical value of 1.98 at 0.05 significant level. Thus, the null hypothesis was not accepted. The results imply that teachers of single marital status use Information Technology and Electronic Technology more than the married teachers as coping strategy for stress management.

DISCUSSION

This study examined the influence of Information and Electronic Technologies on the level of stress management among the primary school teachers. Arising from the results of this study, academic qualification was found to influence teachers' use of IET for the management of stress. Meanwhile, the results in table 2 reveal that teachers with Associate Certificate in Education had the highest mean score while the Masters degree holders had the least mean score. Based on academic exposure, one would have thought that teachers of higher academic

qualification should be more positively disposed to using IET to reduce their stress level, the finding of this study reveals that teachers with academic qualifications lower than the Masters' degree use IET more than their counterparts in the management of stress. The outcome of this study contradicts the finding of Fields (2005) who reported that in order to reduce stress level; teachers of higher qualifications engage in exercises at the gymnasium and use mobile phones to share their burden with other people. That, Nigerian teachers of higher academic qualifications are not great users of IET to manage stress could be attributed to the fact that many teachers are saddled with more academic and administrative responsibilities as they attain higher academic heights, thus leaving them with no time for pleasure and leisure.

The results of table 5 were interesting finding of this study. Primary school teachers' gender had no influence on their use of IET for stress management. Lending support to the finding of this study, Osu (2006) and Calloway (2003) report that teachers of both gender read print media to regulate their mood. They further observe that negative or positive nature of what male teachers read determines their emotional, physical and mental state in connection with stress. Bertoch et al. (2003) found that teachers, irrespective of gender had their stress level reduced after being exposed to audio-visual packages. Similarly, Olley (1999) reported that engaging in relaxation activities is one of the ways to cope with stress. Contrary to the finding of this study, Panenbianco (2003) reported that more men in variance with women make use of stress-management-self-instructional DVDs after long hours of busy days to reduce obsessive-compulsive stress symptoms dramatically. The finding of this study is most surprising because the techno-phobic trait mostly

attributed to females would have negatively influenced their use of IET to suppress their level of stress.

The finding further showed that marital status played a major role in determining teachers' use of IET for stress management (Table 6). By the outcome of this study, teachers who are not yet married were found to be great users of IET to manage their stress level, while those that are married were not. Though, positive or negative research findings in this direction seem not be available yet, but one may attribute the outcome of this study to the possibility of the fact that married teachers have to juggle between the official assignments as well as the unavoidable marital responsibilities and challenges. On the other hand, the unmarried teachers seem to have reasonable time at their disposal to engage in other activities that would contribute to good control of their body system and adequate regulation of their mood, thus promoting and ensuring balanced emotional, mental and physical state of health. No wonder, many teachers especially within the spectrum of Nigerian educational system look physically good, robust, handsome or beautiful when single, but sometimes look unattractive and haggard after marriage while still in the noble profession – teaching.

CONCLUSION

Stress of varying degrees is an inevitable phenomenon in teaching and possibly in all other careers of life. Ling (1991), Yahaya et al. (2008) and Devonport et al. (2008) note that teaching in its nature is highly stressful. If teachers' stress is not minimized or unresolved, it will directly or indirectly have ripple effects on the teachers' emotional, mental and physical health which may have negative effects their effectiveness in

Table 5: t-test analysis of male and female teachers' use of information technology and electronic technology for stress management

Group	N	Mean	d	Df	t-cal	t-crit	P	Remarks
Male	176	145.8523	32.56701	704	.751	1.98	>.05	Accepted
Female	530	142.9925	30.46060					

Table 6: t-test analysis of teachers' use of information technology and electronic technology for stress management based on marital status

Group	N	Mean	d	Df	t-cal	t-crit	P	Remarks
Married	536	141.3993	31.48	704	2.502	1.98	<.05	Not accepted
Single	170	150.9765	28.26					

teaching and learning process. Obviously, when teachers are unduly stressed, education system will be impaired, thus inefficiency may ensue. However, the degree of job satisfaction in the school environment would help reduce the stress level of school teachers, and such environment is mirrored with the availability of relevant and adequate Information and Electronic Technologies. The availability of such technologies and teachers' access to them in schools and at home go a long way to reducing teaching stress because technology is more or less a natural stress medicine that entertains and changes lives for better.

RECOMMENDATIONS

In view of the consequences of teachers stress and the relevance of IET to stress reduction among teachers, the following recommendations are raised to alleviate teachers stress in order to enhance their enthusiasm in teaching profession:

Orientation programmes should be conducted by the government and ministries of education for teachers irrespective of their gender, academic qualification and marital status so that they are kept abreast of "what" and "know how" of IET that could assist to reduce all forms of stress.

Teachers' organizations such as Nigerian Union of Teachers should organize seminars and workshop for married teachers on the need to explore the ample opportunities inherent in the use of IET in the management of teaching stress in order to improve their physical and mental health.

Concerted efforts should be made by the various stake-holders in education industry to ensure teachers' quality service emanating from sound health by establishing well equipped Teachers' Relaxation/Recreation Centres (TRRC) within and outside the school community. And possibly, each teacher in the school especially those with higher academic qualifications and married ones should be given one day out-of-work break every week to defuse feelings of stress and possible maximum utilization of the established relaxation centres.

SUGGESTIONS FOR FURTHER RESEARCH

This study has not covered all issues and areas relating to the influence of Information Technology and Electronic Technology on

Nigerian teachers' stress management level. The researcher therefore encourages other scholars to further embark on studies on this subject matter focusing on secondary school teachers as well as Nigerian higher institutions' lecturers, teachers in private primary and secondary schools, the entire Ogun-State and other states of Nigeria. There may be the need to research on how IT and EM have contributed to teachers stress in Nigeria.

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