Techno Stress Creators -An Exploratory Research on Teaching and Non Teaching Staff Working in Colleges

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Abstract: Employees at all levels in Education experience some level of stress related to the use of information and computer technologies at work and the type of techno-stress experienced by employees may fluctuate which includes data effluence, multitasking, computer hassles, technology addiction, and techno strain etc. Technology in education relies on encompassing both material aspects, such as machines and networking hardware, and organizational aspects like organizational systems, learning techniques and methods applied, and skills evaluation. In this paper an attempt is made to derive various Techno stress creators. Furthermore, it is an attempt to establish the relationship between techno stress creators with gender, region and department.

Keywords: Multitasking, Computer Hassles, Technology Addiction, Region and Department.

I. INTRODUCTION

Stress can be defined as psychologically or emotionally disturbing situation which occur when one is in adverse external influences which further affects our physical health by increasing heart rate, increase in blood pressure, muscular tension, irritability, and depression. Technostress was defined by Wang, et. al is a ''reflection of one's discomposure, fear, tenseness and anxiety when one is learning and using computer technology directly or indirectly that ultimately ends in psychological and emotional repulsion and prevents one from further learning or using computer technology.'' She determined the relationship between technology and stress to find out stress related issues and the extent it affects an individual's life and to have an understanding of the consequences of using too much technology. Her results revealed that thirty-eight percent of the respondents feel anxiety when their cell phones are not around, and 58% always check their cell phone the moment they receive a notification. It was also found that "blur boundaries" exists between the work and home environments. On the whole, her results confirmed that the phenomenon known as "technostress" exists.

Salanova, et. al, gave a definition of technostress experience at work. According to her stress is a ''negative psychological state associated with the use or threat of ICT use in the future. They found that a technostress experience can be related to feelings of anxiety, mental fatigue, skepticism and inefficacy'' (p. 1). Brod [5], demonstrated that employees at all levels of the organization experience some level of stress related to the use of information and computer technologies (ICT) at work. His other studies revealed that the type of techno-stress experienced vary and include data effluence,

Multitasking psychosis, computer hassles, burnout, technology addiction, and techno strain (Salanova, et. al and Brillhart. Technology in education relies on encompassing both material objects, such as machines and networking hardware, and also broader aspects of education such as organizational systems, learning methodologies and techniques, and skills assessments. At the graduate level students in the social sciences and in business administration are already making use of computers in a variety of ways, ranging from the large-scale analysis of data to the simulation of an industry. The time is rapidly approaching when a high percentage of all university graduates will have had some systematic training in the use of computers; a significant percentage of them will have had quite sophisticated training.

According to **Al-Fudail and Mellar** in the past decade, teachers have become exhibiting technostress because of the application of technology in their schools.

In higher education the use of technology has been becoming important. All the work is becoming online with the coming of the concept of e learning. Teachers are also required to maintain all the record and teach in smart class rooms with the advent of technology. With the more and more use of technology stress levels among the academicians has also increased which has lead to the necessity of the study of the symptoms of stress level and ways of coping it. Previous studies have shown that information communication technologies may be related to stress, but the specific kinds of stress related issues have not been fully researched.

II. LITERATURE REVIEW

Technostress according to **Brod (1984)** manifests itself in two distinct and related ways: in the struggle to accept computer technology and in the more specialized form of over identification with computer technology.

Kupersmith, (1992) says that the internet is probably becoming the major causes of technostress due to the fact that many of new information sites with no standard to how they are designed maintained and updated. Dealing with the information overload is a real problem.

Arnetz and Wiholm, (1997) says that in the 21st century, most jobs require some type of technological interaction whether it is in an office or in the field. Interaction with computer systems is inevitable and can create technostress that can lead to ineffectiveness in the workplace as well as health problems.

These health problems lead to missed work, absents and loss in productivity. Organizations need to understand these issues and implement solutions.

Kupersmith, (2003) in his survey discovered that information overload, networking problems, security issues, computer hardware and software, ergonomics and vendor-produced databases as leading causes of technostress for them. Common symptoms of technostress may include: feelings of isolation and frustration; negative attitudes toward new computer based sources and systems; indifference to users' computer-related needs; self depreciating thoughts or statement about one's ability to cope; an apologetic attitudes toward users; and a definition of self as not a computer person. All these may result in the poor job performance by the library and information science professionals which would in turn lead to low library users' satisfaction.

Brillhart, (2004) says that stress has been a major issue for organizations, and employers must deal with it in order to be productive at work. The anxiety and tension can also come from the inability to use the technology that leads to a disadvantage over other workers who do use the technology effectively. The non-users become less competitive compared to their counterparts.

Strang, (2004) It is possible for these factors to be influenced by management, but this idea was not addressed in the literature. These factors were more associated with work-related stress and not technostress, specifically.

Scott and Timmerman, (2005) viewed that stress is most industry in the informational technology field. These IT professional learn how to cope with the technostress by identifying the root cause of the stress and implementing coping strategies such as learning the functionalities and increasing training on the technology to help mitigate the technostress.

Tarafdar et al., (2007) explains that technology factors such as techno-overload, techno-invasion, techno-complexity, techno insecurity and techno-uncertainty can have affect on technostress. These six factors have been shown to have a strong relationship with technostress, but one area that was not addressed in the literature is the role of management influence.

Thomee et al. (2007) demonstrates that technostress can cause depression and sleeping issues. This in turn can affect many other aspects of life such as work and family. Technostress can also affect work performance.

Al-Fudail and Mellar, (2008) conducted their study in educational field. According to him in the past decade, teachers have become exhibiting technostress because of the application of technology in their schools. Knowing that technology can have an adverse effect on the teachers, schools have implemented processes to aid the teachers in reducing technostress. This includes more technology training, practicing before using the technology, changing teaching styles, and classroom management training.

Tiemo, Pereware Aghwotu and Ofua, Justice Owajeme, (2010) in their paper **"Technostress: Causes, symptoms and coping strategies among Librarians in University libraries"** examine the causes, symptoms and coping strategies of technostress among librarians in university libraries. Their study revealed that majority of the librarians experienced technostress as a result of technological changes. And to cope with technostress in their various working places, they agreed to the various coping strategies and plans.

Barley, Meyerson and Grobal (2010) In the article, *Email as a Source and Symbol of Stress* review the increasing volume of email and other technological communications that are regarded as a growing source of stress in people's lives. Research suggests that this new media provides people additional flexibility and control by enabling them to communicate anywhere at any time. However, the authors' research builds theory that unravels this contradiction. Instead, email and other forms of communication led people to feel overwhelmed and unable to cope with the stress.

III. OBJECTIVES OF THE STUDY:

The objectives of the study are:

1. To outline the sources/causes of technostress among college teaching and non teaching staff working in Government Colleges, Private Colleges and Management Institutes.

2. To derive various factors required in techno stress creators.

3. To establish the relationship between Techno Stress Creators and gender.

4. To establish the relationship between Techno Stress Creators and region.

5. To establish the relationship between Techno Stress Creators and Department.

A. Techno Stress Creators or Componenets

The study highlighted five main components of Techno Stress:

Techno-overload: Techno overload describes that the use of technologies forces people to work more at faster pace.

Techno-invasion: Techno invasion is a situation where people feel the need to be constantly connected to technology irrespective of place and time.

Techno-complexity: Techno complexity is a situation where the complex technologies force people to spend recourses in learning and understanding the use of new applications and to update their skills.

Techno-insecurity: Techno insecurity deals with situations where people feel insecure about their jobs while working with other people, whom they think are better equipped with new tools and technologies.

Techno-uncertainty: Techno uncertainty is a situation where technology users feel uncertain and unsettled as technology is continuously changing and needs upgrading due to short life cycles of computer systems.
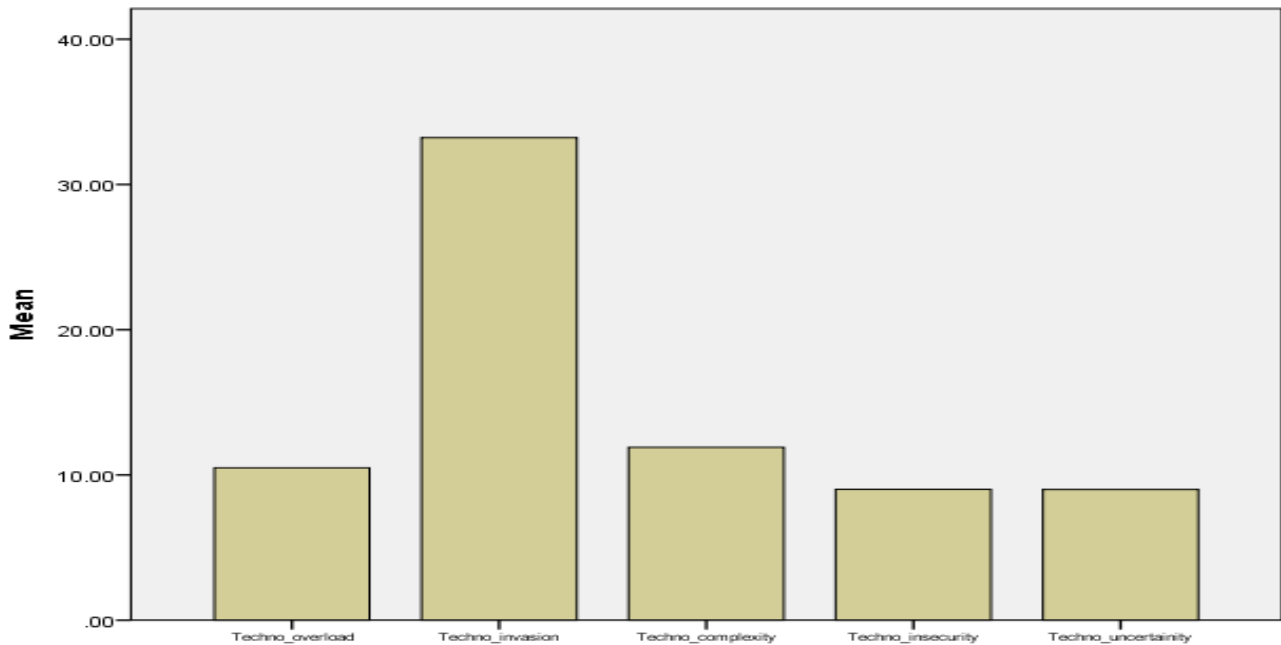
B. Problem Formulation:

Universities all over the world are among the major organizations where Information and Communication Technologies are being used on a large. However, in spite of various benefits of Technology, it is also true that the adoption and utilization of technology have brought about a number of demands and challenges such as technostress and job burnout into workplace.

In the field of education the use of technology has been increasing. Nowadays after the trend of E learning in various universities academicians need to provide notes to students through internet and attendance and assessment are also made online in various colleges and universities. Further due to the change in teaching methods like teaching in smart classrooms they had to cope up with the technology. Non teaching staff had also to use lot of technology for which they had to spend long hours before computer and other technologies like mobiles, fax etc. So an attempt will be made to study the causes or factors of stress among teaching and non teaching staff working in colleges

IV. RESEARCH METHODOLOGY

A. Research Problem

The research problem is to study all the aspects related to Techno Stress Creators for which statement of problem would be :-

- Causes of technostress among college professionals
- Relationship between Techno Stress Creators and gender.
- Relationship between Techno Stress Creators and region.
- Relationship between Techno Stress Creators and Department.

B. Research Design

The research type will be **exploratory** research because the entire research is based on questionnaire and analysis. There will be detailed description in the research, so this will be descriptive design.

C. Sampling Unit and Sampling Size

The sample for the present study would comprise of around 300 employees who comprise of 200 employees at Teaching level and 100 at Non teaching level. The participants would be selected using probability method i.e. **stratified sampling** technique, wherein the strata would be of only the Teaching employees and Non teaching employees, and the selection of sufficient subjects would be done randomly from these stratums, which would be the exact representation of the population. The participants would be Teaching and Non Teaching staff working in Colleges and Management Institutes in Chandigarh Region.

D. Data Sources:

The research plan can call for gathering secondary data as well as primary data. Secondary data consists of information that already exists somewhere having been collected for another purpose. It will be collected from books, magazines, Journals, periodicals and libraries. Information will also be collected through various websites Primary data consists of original information gathered for specific purpose. **.** To collect primary data the questionnaire will be developed to measure the level of techno stress, causes of techno stress and ways of coping techno stress..

In this study, to collect primary data the questionnaire will be developed to measure the level of techno stress, causes of techno stress and ways of coping techno stress among the Teaching and Non teaching staff working in Government colleges, Private colleges and Management Institutes. The five core questions will be measured by statements using seven 5 points of Likert Scale. The seven 5 points is explained below.

1 = Strongly Disagree
2 = Disagree
3 = Moderate
4 = Agree
5 = Strongly Agree

E. Sampling Technique

In this study we specifically include the academic and Non Academic staff of Government colleges, Private colleges and Management Institutes in our research.

The hypothesis will be formed and tested using various methods like Mean, Standard Deviation, and Levene's test for equality of variance and T test for equality of means.

In this research we had collected data from Teaching and Non Teaching staff working in Government colleges, Government aided colleges and Management Institutes. The sample taken was from 300 employees from whom 200 employees are working at Teaching level and 100 at Non teaching level. Hypothesis was formed and analyzed using the software SPSS 21.

Analysis and Interpretation:-

H1: There is a statistically significant relationship between technostress creators and gender

Techno Stress Creators	Total (N)	Mean	Standard Deviation	Standard Error Mean
Techno overload MALE FEMALE	72 224	10.94 10.32	3.39 3.48	0.399 0.233
Techno invasion MALE FEMALE	72 224	35.61 32.47	14.45 10.99	1.7 0.733
Techno complexity MALE FEMALE	72 224	12.57 11.69	3.77 3.44	0.44 0.23
Techno insecurity MALE FEMALE	72 224	9.56 8.79	3.11 2.73	0.37 0.18
Techno uncertainty MALE FEMALE	72 224	9.53 8.83	2.01 2.27	0.24 0.15

TECHNO STRESS CREATORS	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Techno overload	0.264	0.607	1.329	294	0.185	0.62302
Techno invasion	1.532	0.217	1.941	294	0.053	3.13343
Techno complexity	1.13	0.289	1.837	294	0.067	0.87748
Techno insecurity	1.927	0.166	2.032	294	0.043	0.77927
Techno uncertainty	0.286	0.593	2.315	294	0.021	0.69296

 Mean and Standard Deviation for Males were 10.94 and 3.39; and for Females it were found as 10.32 and 3.48. So, we can say Men feel more Techno Overload than Females. However, other stress variables were also found in excess in Males like Techno Invasion (Mean 35.61), Techno Complexity (Mean 12.57), Techno Insecurity (Mean 12.57) and Techno Uncertainty (Mean 9.53). For the Levene's test of equality, there is no variability found among Male and Females as all the values are found more than .05. Significant two tailed test revealed that there is no significant difference between Techno stress overload (p value .185), Techno complexity (p value .67) as all the values are found more than .05. Similarly studying other variables it was found that Male feel more of the Techno Invasion than females but the significance for equality of variance is 0.217 and t test value is 0.053 which is more than 0.05. Significant difference was found for the variables Techno insecurity and Techno Uncertainty as the t test values for equality of means were .043 and .21 at 5% level of significance. So, it is implied that Males feel more insecurity and uncertainty while using technology.

H2: There is a statistically significant relationship between technostress creators and region.

TECHNO STRESS CREATORS	REGION	MEAN	STANDARD DEVIATION	STANDARD ERROR MEAN
Techno overload IN CHANDIGARH	252	10.1468	3.33971	0.21038
AROUND CHANDIGARH	46	12.3478	3.57284	0.52679
Techno invasion IN CHANDIGARH	252	32.377	11.72174	0.7384
AROUND CHANDIGARH	46	37.8913	12.19695	1.79834
Techno complexity IN CHANDIGARH	252	11.9802	3.51712	0.22156
AROUND CHANDIGARH	46	11.4565	3.60682	0.5318
Techno insecurity IN CHANDIGARH	252	8.7579	2.81589	0.17738
AROUND CHANDIGARH	46	10.3696	2.73544	0.40332
Techno uncertainty IN CHANDIGARH	252	8.9881	2.26436	0.14264
AROUND CHANDIGARH	46	9.087	2.00916	0.29623

TECHNO STRESS CREATORS	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Techno overload	0.883	0.348	-4.066	296	0	-2.201
Techno invasion	1.508	0.22	-2.916	296	0.004	-5.51432
Techno complexity	0.015	0.902	0.925	296	0.356	0.52364
Techno insecurity	0.083	0.774	-3.585	296	0	-1.61163
Techno uncertainty	0.345	0.557	-0.277	296	0.782	-0.09886

After analyzing the data it was found that employees around Chandigarh feel more Techno Overload (Mean 12.3478 Sd. Deviation 3.57284), Techno invasion(Mean37.89 Standard Deviation12.19) Techno Insecurity (Mean10.3696 Sd. Deviation 2.73544), Techno Uncertainty (Mean 9.0870 Sd. Deviation 2.00916). However, employees working in Chandigarh feel more Techno Complexity (Mean 11.9802 Sd. Deviation 3.51). Levene's Test for Equality of variance was found across the sample as all the values were found more than .05. No significant difference was found for the variables Techno complexity and Techno Uncertainty as the t test values for equality of means were .356 and .782 at 5% level of significance. Since, p value for Techno Overload (.000), Techno invasion (.004) and Techno insecurity (.000) is less than .05 which means that significant difference was found between these variables and employees working in and around Chandigarh. So, results revealed that employees working around Chandigarh feel more Techno Overload, Techno invasion and Techno insecurity.

H3: There is a statistically significant relationship between technostress creators and Department

	Group Statistics				
	Department	N	Mean	Std. Deviation	Std. Error Mean
Techno_overload	Commerce and Management	233	10.6137	3.61226	0.23665
	Other	66	10.0758	2.84638	0.35036
Techno_invasion	Commerce and Management	232	33.681	12.6348	0.82952
	Other	66	31.5758	8.97014	1.10415
Techno_complexity	Commerce and Management	233	11.7253	3.65213	0.23926
	Other	66	12.5455	2.99323	0.36844
Techno_insecurity	Commerce and Management	232	8.8793	2.8548	0.18743
	Other	66	9.4697	2.84589	0.3503
Techno_uncertainity	Commerce and Management	233	8.9571	2.30402	0.15094
	Other	66	9.1212	1.87711	0.23106

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Techno_overload	Equal variances assumed	5.189	0.023	1.115	297	0.266
	Equal variances not assumed			1.272	130.24	0.205
Techno_invasion	Equal variances assumed	7.053	0.008	1.265	296	0.207
	Equal variances not assumed			1.524	145.993	0.13
Techno_complexity	Equal variances assumed	4.464	0.035	-1.672	297	0.096
	Equal variances not assumed			-1.867	125.144	0.064
Techno_insecurity	Equal variances assumed	0.326	0.569	-1.483	296	0.139
	Equal variances not assumed			-1.486	105.118	0.14
Techno_uncertainity	Equal variances assumed	2.154	0.143	-0.531	297	0.596
	Equal variances not assumed			-0.595	125.892	0.553

Data was distributed to 300 employees from whom 299 employees working in different department responded. Study revealed that Techno Overload (Mean10.61 Standard Deviation 3.61) and Techno invasion (Mean33.68 Standard Deviation12.63) was felt more by employees from Commerce and Management Departments whereas Techno Complexity (Mean12.54 Standard Deviation2.99), Techno insecurity (Mean 9.46 Standard Deviation2.84) and Techno Uncertainty (Mean9.12 Standard Deviation1.87) was felt more among employees working in Departments other than Commerce and Management. As no significant difference was found for any variable and difference in means may be purely due to chance.

V. CONCLUSION

Employees at all levels in the organization experience some level of stress while using information and computer technologies at work. Techno stress experienced may vary and includes computer hassles, job burnout, technology addiction, and techno strain.

Technology in education encompasses both material objects, such as machines and networking hardware, and various aspects in education such as organizational systems, learning methodologies and techniques, and skills assessments. In the ancient times, teachers have been exhibiting technostress because of the application of technology in education sector as well. So, the present research focuses on Academic and Non Academic staff working in Government colleges, Private colleges and Management Institutes. The hypothesis will be formed and tested using various methods like Mean, Standard Deviation, and Levene's test for equality of variance and T test for equality of means. **Results revealed that** Males feel more insecure and uncertain while using technology. Furthermore, employees working around Chandigarh feel more Techno Overload, Techno invasion and Techno insecurity and no significant difference was found if we categorize it department wise.

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