A Study of Technophobia among Secondary School Students of North Bengal

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ABSTRACT: *This article explores technophobia among secondary school students of North Bengal. We live in a highly technological world. Technology-mediated teaching-learning processes caused a need for people to realize, adjust, adapt, accept and utilize technology. Some people accept it enthusiastically whereas some people show different attitudes towards adopting this. Typically it can be said that some people cannot adopt it because they don't want to adopt it. Many students struggle with technology, avoid learning through the new forms of technology or fail to take full advantage of it because they don't know how to use it. They have some kinds of fear, panic or anxiety about using it. This may cause resistance to the use of the technology. This particular paper has highlighted the difference between government and private secondary school students for their technophobia, the difference in technophobia between boys and girls of secondary schools and the difference in technophobia between students of urban and rural secondary schools.*
KEYWORDS: *Technology, Technophobia, Information Technology, Educational Technology.*

I. Introduction

1.1. Background of the Study

In the period of modernization and advancement of technology, the adaption and supportiveness of technology have always been considered crucial for the comprehensiveness of education. As a result, many developing technologies become an integral part of the educational system. The every step of the educational process including the curriculum and beyond the curriculum, technology brings the revolution. The use of new technology changes the teaching styles of the teachers. More importantly, we can say that it changes the way of thinking of the students.

The technology-mediated teaching-learning process caused a need for people to realize, adjust, adapt, accept and utilize technology. Some people accept it enthusiastically whereas some people show different attitudes towards adopting this. Typically it can be said that some people cannot adopt it because they don't want to adopt. Many students struggle with technology, avoid learning through the new forms of technology or fail to take full advantage of it because they don't know how to use it. They have some kinds of fear, panic or anxiety about using it. This may cause resistance to the use of technology.

1.2. Need and Significance of the Study

Technology-oriented anxiety affects virtually all strata of our society from children and adults to seniors and education has an area of a great deal of study and research. Technology-oriented anxiety is a feeling of being fearful or apprehensive when using or considering the use of computers. Some researchers prefer to apply more technical terms to the phenomena such as 'Technophobia' Fritscher, 2020, and 'Cyber phobia' Fritscher, 2020. While technophobia refers to a general fear of all things technological, Cyber phobia focuses more specifically on computers Osiceanu, 2015. "Anxiety itself is defined as a painful uneasiness of mind or an abnormal apprehension of fear often accompanied by psychological change such as sweating or increased pulse" Chand and Marwaha, 2021.

II. Literature Review

2.1. Insights of Previous Literature

Several existing studies found related to computer anxiety in sex, race, and age *Gilroy and Desai, 1986*; Psychosocial implications and attitudes toward computers *Collins, 1985*; computer anxiety of rural, middle and secondary school students *Campbell, 1989*; technophobic attitude among the Students (*Dhawan and Sharma, 2015)*, techno-stress impact on library professionals (*Das, 2019*), modern education problem of technophobic teachers (*Mukhopadhyay, 2014*), overcoming technophobia through educational

programs (*Stueart and Techamanee collected from web.simmons.edu*), technophobia among post-graduate students (*Behera and Halder, 2020*), technophobia among female undergraduate students (*Achuonye and Ezekoka, 2011*), technophobia among the bachelor student of education and teachers (*Mahanti, 2016*), Technophobia of Higher Secondary school Teachers (*Selvaganapathi and Viayapuri, 2012*) and many more. *Yunus et al. (2016)* clarified computer phobia among adult university students and showed a fair level of computer nervousness. But the female students are moderately high technophobic than male students. *Achuonye and Ezekoka (2011)* stated that technophobia exists among female undergraduate students in Imo State University, Nigeria. Results showed that technophobia exists between female students and authors also mentioned that it was only the early results and experience of the use of computers and technologies. *Hogan (2009)* studied the age differences in technophobia with two levels of differences between the older adults and students, and the genders. A significant difference was found between the two groups and the older adults have a higher level of technophobia than students at various levels. Similarly, *Gupta and Kapri (2018)* showed a comparative study of computer anxiety among secondary school students and suggested that a majority of secondary students have moderate problems and nervousness about computer technologies, but they are also inspired to change their level of understanding and perception.

2.2. Research Gap

Similarly, various studies have been conducted on attitudes towards technology use with gender *Brosnan and Lee, 1998*; *Rosen and Weil, 1992 (California State University)*; *Li and Kirkup, 2007*; *Sharma and Pathak, 2017*; *Ursavaş and Karal, 2009*; but a very few studies have been conducted on anxiety and phobia towards technology use for locality and gender. Keeping in view the critical analysis of the findings from the review of literature, the present study was selected as, "a study of technophobia among secondary school students of North Bengal". If this research is fruitful something could be done to eliminate technology anxiety among secondary students of government schools. So, the investigator was tempted to conduct the research to compare the technology anxiety of rural and urban students in their demographic way. The study can be helpful for the students, teachers, management and government bodies for the construction of curriculum and effective technology education for various stages of school education and college students.

2.3. Objectives of the Study

Keeping in view the above background the study has the following objectives:

a. To explain the difference between government and private secondary school students for their technophobia.

b. To clarify the difference in technophobia between boys and girls of secondary schools.

c. To examine the difference in technophobia between students of urban and rural secondary schools.

2.4. Hypotheses of the Study

In the light review of literature, objectives and problem, the following three null hypotheses are formulated:

• H_{01}: There is no significant difference between government and private secondary school students for their technophobia.

• H_{02}: There is no significant difference in technophobia between boys and girls of secondary schools.

• H_{03}: There is no significant difference in technophobia between students of urban and rural secondary schools.

II. Data and Methodology

3.1. Data and Its Sources

The self-made questionnaire developed and standardized by the investigator was used for data collection. But before administering the tool, the investigator put the students at ease by explaining the purpose of administration and motivated them to give their responses or opinions honestly. The respondents were also assured that the information provided by them would be kept secret and is not related to their academics. The principals of selected schools were approached for permission for the collection of data. The schedule was prepared for each school and the principal was informed accordingly.

3.2. Methodology and Research Design

In the present study, the descriptive survey method of research was used to collect the data *Gupta and Kapri, 2018*.

Population: The population of the study comprised all secondary school students of Jalpaiguri and Cooch Behar districts of North Bengal will be the population of the study.

Sample of the study: The sample for the study consisted of 300 students of class IX randomly selected from four government and four private secondary schools located in Jalpaiguri and Cooch Behar districts of North Bengal. The schools were selected based on multilayer sampling whereas a simple random technique was followed to select the IXth class students.

IV. Analysis and Interpretation

4.1. Technophobia among Government Secondary School Students

The mean and standard deviation of the raw scores of technophobia were calculated to calculate z-scores. Table 1, given below shows the ranges of raw scores, ranges of z-scores, various levels of technophobia ranges and the number of students under various levels of technophobia scale Gupta and Kapri, 2018. On analysing the data of the level of technophobia of 300 secondary school students it was concluded that 10 students of secondary schools were found at extremely High level of technophobia while 32 students were found under High level, 46 students were at above average level, 119 students at moderate level, 56 students at Below Average level, 37 students at Low and not a single student of secondary schools were found at extremely Low level of technophobia. From the collected data it has come to know that the maximum number of secondary school students was found under a moderate level of technophobia.

Table 1: Number of Secondary School Students under Various Levels of Technophobia

Sl. No.	Range of Raw Scores	Range of z-scores	Decision	No. of Students
1	149 & above	+2.01 & above	Extremely High	10
2	128-148	+1.26 to +2.00	High	32
3	106-127	+0.51 to +1.25	Above Average	46
4	77-105	+0.50 to -0.50	Moderate	119
5	56-76	-0.51 to -1.25	Below Average	56
6	36-75	-1.26 to -2.00	Low	37
7	35 & below	-2.01 & below	Extremely Low	00
			Total	300

Sources: Authors' contribution

4.2. Technophobia among Government Secondary School Students

Table 2 shows the ranges of raw scores, ranges of z-scores, various levels of technophobia ranges and the number of students under various levels of technophobia scale. On analysing the data of the level of technophobia of 150 Government secondary school students it was concluded that 9 students of Government secondary schools were found at extremely High level of technophobia while 22 students were found under High level, 28 students were at above average level, 58 students at moderate level, 23 students at Below Average level, 10 students at low and not a single student of s Government secondary schools were found at extremely low level of technophobia. From the collected data it has come to know that the majority of Government secondary school students were found under a moderate level of technophobia.

Table 2: Number of Government Secondary School Students under Various Levels of Technophobia

Sl. No.	Range of Raw Scores	Range of z-scores	Level of Computer Anxiety	No. of Students
1	149 & above	+2.01 & above	Extremely High	9
2	128-148	+1.26 to +2.00	High	22
3	106-127	+0.51 to +1.25	Above Average	28
4	77-105	+0.50 to -0.50	Moderate	58
5	56-76	-0.51 to -1.25	Below Average	23
6	36-75	-1.26 to -2.00	Low	10
7	35 & below	-2.01 & below	Extremely Low	0
			Total	150

Sources: Authors' contribution

4.2. Technophobia among Government Secondary School Students

Table 2, given below shows the ranges of raw scores, ranges of z-scores, various levels of technophobia ranges and the number of students under various levels of technophobia scale. On analysing the data on the level of technophobia of 150 Government secondary school students it was concluded that 9 students of Government secondary schools were found at extremely High levels of technophobia 22 students were found under High level, 28 students were at above average level, 58 students at moderate level, 23 students at Below Average level, 10 students at Low and not a single student of s Government secondary schools were found at extremely Low level of technophobia. From the collected data it has come to know that the majority of Government secondary school students were found under a moderate level of technophobia.

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4	77-105	+0.50 to -0.50	Moderate	58
5	56-76	-0.51 to -1.25	Below Average	23
6	36-75	-1.26 to -2.00	Low	10
7	35 & below	-2.01 & below	Extremely Low	0
			Total	150

Sources: Authors' contribution

4.3. Technophobia among Private Secondary School Students

Table 3, given below shows the number of private secondary school students under various levels of technophobia. On analysing the data on the level of computer anxiety of 150 private secondary school students it was concluded that only 1 student of private secondary schools was found under extremely high level of technophobia while 10 students were found under High level, 18 students were at above average level, 51 students at moderate level, 43 students at Below Average level, 27 students at low and not a single student of private secondary schools were found at extremely low level of technophobia. From the collected data it has come to know that the maximum number of private secondary school students was found under moderate level of technophobia.

Table 3: Number of Private Secondary School Students under Various Levels of Technophobia

Sl. No.	Range of Raw Scores	Range of z-scores	Level of Computer Anxiety	No. of Students
1	149 & above	+2.01 & above	Extremely High	1
2	128-148	+1.26 to +2.00	High	10
3	106-127	+0.51 to +1.25	Above Average	18
4	77-105	+0.50 to -0.50	Moderate	51
5	56-76	-0.51 to -1.25	Below Average	43
6	36-75	-1.26 to -2.00	Low	27
7	35 & below	-2.01 & below	Extremely Low	0
			Total	150

Sources: Authors' contribution

4.4. Technophobia among Urban Secondary School Students

Table 4, given below shows the number of urban students under various levels of technophobia. On analysing the data of the level of technophobia of 150 urban secondary school students it was concluded that only 2 students of urban secondary schools were found under extremely high level of computer anxiety while 11 students were found under High level, 19 students were at above average level, 52 students at moderate level, 40 students at Below Average level, 26 students at Low and not a single student of urban secondary schools was found at extremely low level of technophobia.

Table 4: Number of Urban Secondary School Students under Various Levels of Technophobia

Sl. No.	Range of Raw Scores	Range of z-scores	Level of Computer Anxiety	No. of students
1	149 & above	+2.01 & above	Extremely High	2
2	128-148	+1.26 to +2.00	High	11
3	106-127	+0.51 to +1.25	Above Average	19
4	77-105	+0.50 to -0.50	Moderate	52
5	56-76	-0.51 to -1.25	Below Average	40
6	36-75	-1.26 to -2.00	Low	26
7	35 & below	-2.01 & below	Extremely Low	0
			Total	150

Sources: Authors' contribution

4.5. Technophobia among Rural Secondary School Students

Table 5, given below shows the ranges of raw scores, ranges of z-scores, various levels of technophobia ranges and the number of rural students under various levels of technophobia. On analysing the data on the level of technophobia of 150 rural secondary school students it was concluded that only 8 students of rural secondary schools were found under the extremely high level of technophobia while 21 students were found under the high level, 27 students were at above average level, 57 students at a moderate level, 26 students at Below Average level, 11 students at Low and not a single student of rural secondary schools was found at extremely low level of technophobia. From the collected data it has come to know that the maximum number of rural secondary school students was found under moderate level of technophobia.

Table 5: Number of Rural Secondary School Students under Various Levels of Computer Anxiety Scale

Sl. No.	Range of Raw Scores	Range of z-scores	Level of Computer Anxiety	No. of students
1	149 & above	+2.01 & above	Extremely High	8
2	128-148	+1.26 to +2.00	High	21
3	106-127	+0.51 to +1.25	Above Average	27
4	77-105	+0.50 to -0.50	Moderate	57
5	56-76	-0.51 to -1.25	Below Average	26
6	36-75	-1.26 to -2.00	Low	11
7	35 & below	-2.01 & below	Extremely Low	0
			Total	150

Sources: Authors' contribution

4.6. Comparison of Technophobia between Government and Private Secondary School Students

Table 6 shows relevant statistics i.e. mean, standard deviation (SD), and t-ratio between the mean scores of technophobia of government and private secondary school students. It is clear from the calculated data that government school students were found to be more anxious towards the use of technology in comparison to the students of private secondary schools. The calculated t-value of mean scores of technophobia between government and private school students was calculated to be 2.99 which is greater than the tabulated t-value (1.96) at a 5 percent level of significance. Therefore, it is clear that the two groups differ significantly on their technophobia scale.

Table 6: Mean Comparison of Technophobia between Government and Private Secondary School Students

Group	N	Mean	S. D.	t-value	Decision
Government School Students	150	96.075	30.299		
				2.99	Significant
Private School Students	150	86.675	25.765		

Sources: Authors' contribution

Graph-1
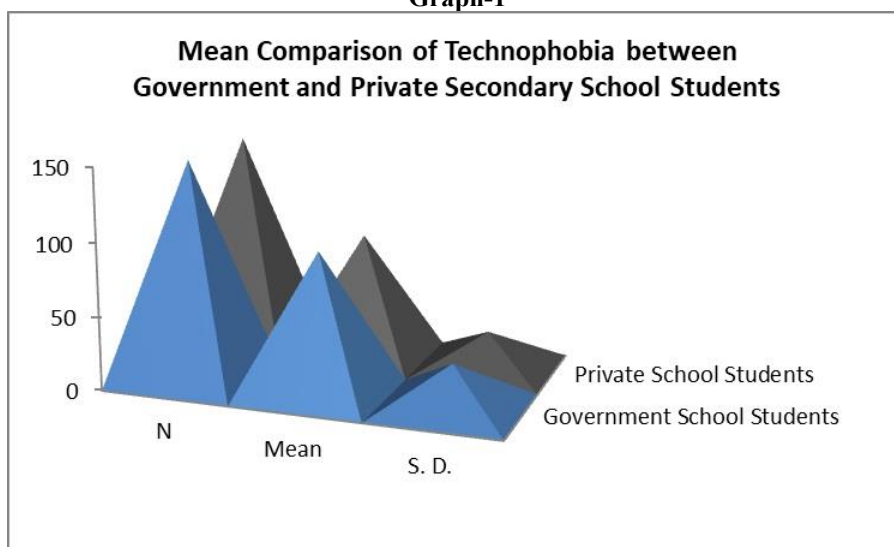
4.7. Comparison of Technophobia between Boys and Girls Secondary School Students
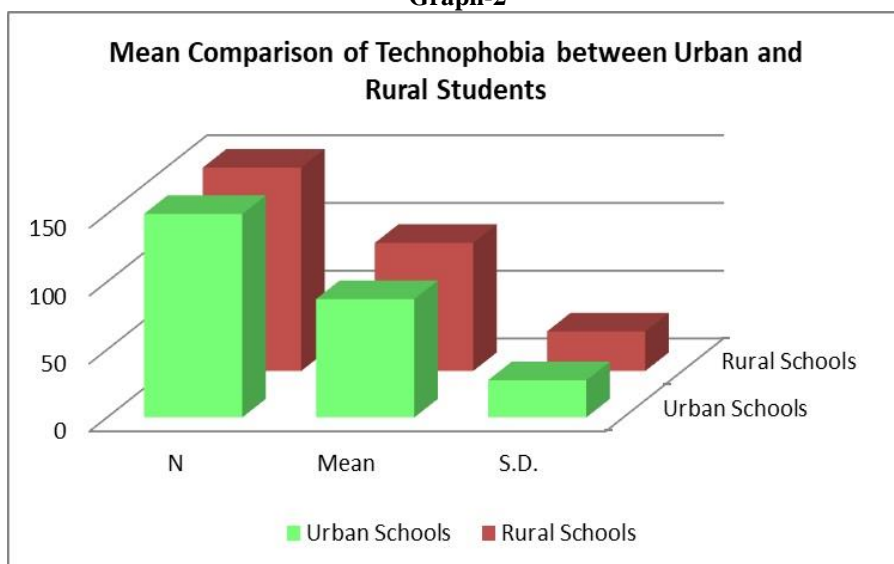
A comparison of technophobia between boys and girls studying in secondary schools is given here. The finding shows that the girls were found to be more anxious towards the use of technology in comparison to the boys in secondary schools. The calculated t-value between mean scores of boys and girls of secondary schools was calculated to be 0.82 which is less than the tabulated t-value (1.96) at a 5 percent level of significance. So, it is clear from the table that the two groups do not differ significantly on their technophobia scale.

Table 7: Mean Comparison of Technophobia between Boys and Girls of Secondary Schools

Group	N	Mean	S. D.	t-value	Decision
Boys	150	90.062	29.197	0.82	Insignificant
Girls	150	92.687	27.756		

Sources: Authors' contribution

Graph-2

4.8. Comparison of Technophobia of Urban and Rural Students

Table 8 shows relevant statistics on technophobia between urban and rural students of secondary schools. The finding of the study shows that the students of rural secondary schools were found to be more anxious towards technology in comparison to the students studying in rural areas of secondary schools. Both the groups differ in the scale of technophobia. The t-value between the mean scores of technophobia of

students of urban and rural secondary schools is calculated to be 2.28 which is significant at a 5 percent level of significance. Thus, there exists a significant difference in technophobia between the students studying in secondary schools located in urban and rural areas of the two districts of North Bengal. The reason behind this may be the locale.

Table 8: Mean Comparison of Technophobia between Urban and Rural Students

Students	N	Mean	S.D.	t-value	Decision
Urban Schools	150	87.26	27.48	2.28	Significant
Rural Schools	150	94.48	29.17		

Sources: Authors' contribution

Graph-3

Mean Comparison of Technophobia between Boys and Girls
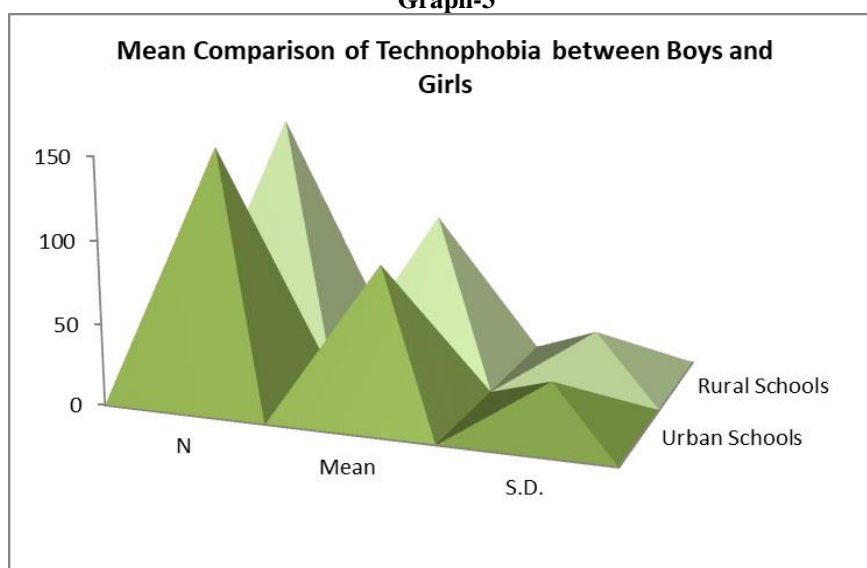
V. Major Findings of the Study

The major findings of the study are given below:

• From the collected data it has come to know that the maximum number of secondary school students was found under a moderate level of technophobia.

• Only a few students were found under extremely high but not a single student in secondary school was found extremely low level of technophobia.

• No student of Government secondary schools was found under extremely low level of technophobia.

• The majority of students in private secondary schools were found under a moderate level of technophobia.

• No student of private secondary schools was found under extremely low level of technophobia.

• The majority of urban secondary school students had a moderate level of technophobia.

• No student of private secondary schools was found under extremely low level of technophobia.

• From the collected data it has come to know that the maximum number of rural secondary school students was found under moderate level of technophobia.

• No student of private secondary schools was found under extremely low level of technophobia.

• It is clear from the calculated data that government school students were found to be more anxious towards the use of technology in comparison to the students of private secondary schools.

• There exists a significant difference between government and private secondary school students for their technophobia.

• The mean score of technophobia of girls in secondary school is higher than the mean score of technophobia of boys in secondary schools which is statistically not significant.

- The finding shows that the girls were found to be more anxious towards the use of technology in comparison to the boys in secondary schools.
- The finding of the study shows that the students of rural secondary schools were found to be more anxious towards computers in comparison to the students studying in rural areas of secondary schools.
- The mean score of technophobia of the students studying in rural areas is higher than the mean score of technophobia of students studying in secondary schools located in urban areas.

VI. Conclusion of the Study

Technologies are the inevitable tools for the modern technology of the world. Technology has become an essential part of our life. Computers are used in mostly private schools so there is no fear of technology and phobia in that secondary students but it is found that the students of government secondary schools had technophobia in their minds. There have been growing concerns that the students of government secondary schools possess negative attitudes towards the use of computers and it prevents them from reaping the pedagogical, social, and economic benefits of computer technology. The students of secondary schools in rural areas were found to be more anxious towards the use of computers than the students of secondary schools in urban areas because the students of rural secondary schools did not have better computer facilities in their schools, so, to remove technophobia among them it is necessary to avail them better computer facilities in their schools. It is required that female students should also be encouraged and motivated towards computer use to reduce their anxiety and phobia towards the use of computers. The government at all levels should provide computer systems for student use in schools.

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