

AWARENESS OF ELEMENTARY SCHOOL TEACHERS TOWARDS CYBER- SECURITY

Tapas Singh Sardar & Dr. Pratap Kumar Panda

Research Scholar, Department of Education (S.K.B.U), Purulia

Ph.D. supervisor and Principal, Ramananda Centenary College, Laulara, Purulia

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Abstract

In this era, elementary education has become more attractive with the digital touch. Technology plays a crucial role in an integrated classroom environment. Elementary education transformed from a blackboard to the digital tools of teachers. Teachers enhance their teaching skills through various online teaching-learning platforms. Many of them are also active on social media. In these days, to face some educational-related problems, teachers go through the internet and find the appropriate solution. One side of the Internet is beneficial, but the other side introduces cyber-threats and cyber-attacks. Hackers access personal data and use it in a bad manner. This paper investigates the awareness of cyber security among elementary school teachers in Purulia District. 100 respondents are from rural and urban school localities as a sample of this study. The descriptive survey method has been used. The result shows that no significant difference of elementary teachers on the basis of gender. But there is notable difference on the school locale.

Keywords: *Cyber-security Awareness, Elementary school Teachers, Purulia District, Cyber-treats and Cyber-attacks.*

Introduction:

In this present situation, we are living in two different worlds, one real and another virtual. Users create a technology-simulated environment known as the "virtual world" using digital devices like personal computers, laptops, and smartphones. This concept recreates the real world in imaginary realms. Today, educators use these technological aspects to enhance effectiveness in the field of education. Users share their personal data on this cyberspace in a variety of ways (Ishak & Ghani 2015). But the data was not secure every time. Fostering digital safety and security is in prime demand these days. Without awareness, hackers exploit network sites through unauthorized access and digital attacks on users' personal data (Das, Karmarkar, and Kamruzzaman 2019). Cyber security is crucial to protecting personal data in the cyber world,

such as official data, sensitive data, and intellectual property. (National Cyber Security Awareness Month, October 2021).

1. Cyber-security awareness is the most compulsory way to protect online data. Elementary school teachers should be aware to ensure safety and security for their own personal information. There are some steps taken by teachers to raise cyber security awareness.
2. Teachers must be aware of cyber threats like phishing attacks, malware infections, data breaches, and cyberbullying.
3. Protecting school and personal data from hackers, using strong ID passwords, and maintaining privacy and confidentiality.
4. Teachers should be creating secure learning environments for online learning.

Review of the Related Literature:

Talpe, G. (2023), has conducted a study on college students to determine their awareness of cyber security. With 100 college students, the result is that most of them are not aware of cyber security. Zulkifli, Z. et al. (2020). have carried out a similar study on secondary school students in Malaysia, and as per the findings, most of the respondents are aware of cyber threats and risks. Moallem, A. (2019). Has investigated college students' awareness of cyber security in Silicon Valley, California, USA. And the result shows that they are not highly aware of cyber security while using the internet. Chandarman, R., & Van Niekerk, B. (2017). I have done the research to know the private tertiary school students' cyber security awareness. The findings address the low awareness of this particular population. Chang, V. et al. (2023). undertook a study on "Cybersecurity for Children: An Investigation into the Application of Social Media," specifically teen children. The study found that many teenagers are less aware of cybersecurity when using social media. Rahman, M. J. A. et al. (2019) have performed research on "The UKM Students Perception towards Cyber Security." The main objective of the study was to find out the perception, knowledge, and awareness of cyber security. The results indicate a moderate level of each of the aforementioned attributes among UKM students. Elradi, M. D., et al. (2020) conducted a study on Sudanese College students and faculty members to determine their awareness of cyber security. The study selected 200 students and 100 faculty members as samples. The results showed that faculty members had 8% more knowledge and skills in cyber security than students. Alharbi, T., and Tassaddiq, A. (2020) were investigating the awareness of cyber-security among undergrad students at Majmaah University. The investigator used a scientific questionnaire with a quantitative research methodology. The finding indicates that undergrad students at Majmaal University are positively aware of cyber security. Raju, R. et al. (2022). The study delves into the topic of "Cyber Security Awareness in Using Digital Platforms among Students in a Higher Learning Institution," where 110 respondents shared their personal perspectives. The statistical analysis revealed that the majority of students possessed awareness and knowledge about cyber security. R. Kant (2023) conducted a similar study on higher education students in an Indian context. This study revealed a significant difference in the awareness of cyber-security among students living in different residential areas. Students in urban areas are more aware than students in rural areas.

Rationale of the Study:

After a deep review of the related topic in India and abroad, researchers have rarely found the research done by scholars in the field of elementary school teachers for the same. Most of the research is done in the higher education area, whether it is for college or university students and faculty members. The important thing to think about is that fundamental education has gone through the elementary stage. In this situation, teachers use a lot of technological aspects to provide the students with an effective and creative teaching-learning process. Nowadays, elementary teachers should use the internet for their professional work in online mode. The 21st century has rapidly increased the use of the internet globally. However, using the internet is not secure every time because of the high risk of cyber-threats, cyber-attacks, and cyber-bullying. So, being aware of cyber security is a prime requirement when using the internet on a mobile, laptop, or computer. For this reason, researchers have been concerned about the need to investigate the awareness of cyber security among elementary teachers.

Statement of the Problem:

Awareness of elementary school teachers towards cyber-security

Operational Terms:

Cyber Security:

Technological security awareness refers to the alertness of digital security. It is essential to maintain proactive acknowledgement of digital threats or attacks.

Elementary School Teacher:

This term describes an institutional guide who guides students through the teaching-learning process and fosters a healthy and interactive classroom environment in elementary school.

Objectives of the Study:

1. To understand the difference between male and female elementary school teachers towards awareness of cyber security.
2. To investigate the differences between urban and rural elementary school teachers' awareness of cyber security.

Hypotheses of the Study:

H₀₁: There is no significant difference between male and female elementary school teachers' awareness of cyber security.

H₀₂: There is no significant difference between rural and urban elementary school teachers in respect of cyber-security awareness.

Delimitation of the Study:

1. The present study was delimited to only one district in West Bengal.
2. The current study was delimited to the two sub-divisions of Purulia district.
3. This study was delimited to only elementary school teachers.

Methodology of the Study:

Method: In this present study, researchers have framed a descriptive survey in online mode. We have gathered quantitative data to interpret the results.

Samples and sampling: The researchers have collected 100 respondents from various primary and upper-primary school teachers in Purulia district through simple random sampling.

Tool: In this current study, researchers have constructed a self-made scale. There were 25 statements in the preliminary draft. Experts in this field have measured face validity. Researchers removed five statements and then used the tool for data collection.

Statistical Treatment: Researchers have followed the statistical technique below for data analysis.

- a) Mean
- b) Stander deviation
- c) T-test
- d) Graph

Data Interpretation and Discussion:

In this current study, researchers have used SPSS (20 version) and data analysis and interpretation as per the hypothesis.

H₀₁: There is no significant difference between male and female elementary school teachers awareness of cyber security.

Table no. 1 comparison of male and female elementary school teachers' of purulia district in respect of their cyber security awareness

GENDER	N	Mean	SD	Mean Different	df	t-value	Table t-value	Remark
MALE	50	75.92	7.99	0.78	98	0.86	1.98 (0.05 level)	Not significant
FEMALE	50	76.14	7.21				2.63 (0.01 level)	

Table no. 1, observed, the scores of male and female elementary teachers are 75.92 and 76.14, respectively. S.D. is 7.99 and 7.21; calculate 't' value 0.86. calculated 't' value score is less than both levels of significance. It quietly stated that there is no statistical difference between male and female teachers in their cyber security. Awareness.

Therefore, H₀₁ is accepted at both the 0.05 and 0.01 levels of significance. On the basis of the interpretation of the data, researchers favor that there is no remarkable difference between male and female elementary school teachers in their awareness of cyber security.

FIGURE: 1

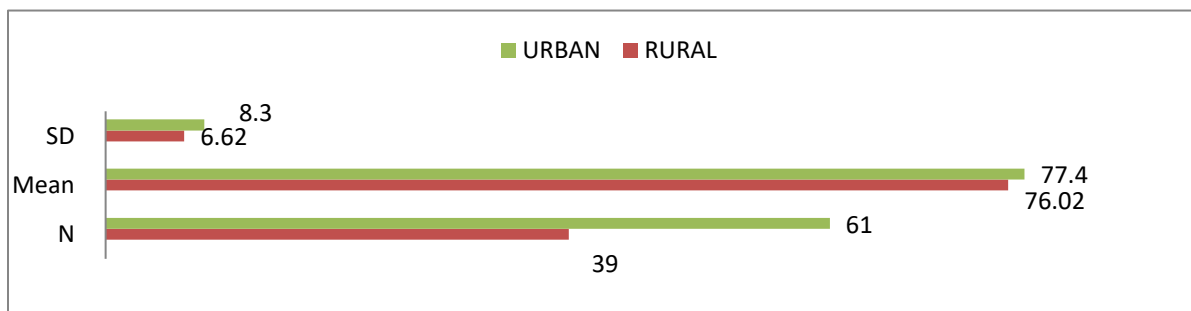
H₀₂: There is no significant difference between rural and urban elementary school teachers in respect of cyber-security awareness.

Table no.2 comparison of rural and urban elementary school teachers' of purulia district in respect their cyber security awareness

LOCALE	N	Mean	SD	Mean Different	df	t-value	Table t-value	Remark
RURAL	39	76.02	6.62	1.68	98	2.16	1.98 (0.05 level)	Significant at 0.05 level
URBAN	61	77.40	8.30				2.63 (0.01 level)	

The table above shows that the mean scores for elementary school teachers in rural areas are 76.02, with a standard deviation of 6.62, while the mean scores for teachers in urban areas are 77.40, with a standard deviation of 8.30. The calculated 't' value is 2.16. The calculated 't' value exceeds the 0.05 level of significance and falls below the 0.01 level of significance. There is a difference in cyber security awareness between rural and urban elementary school teachers, which is significant at the 0.05 level.

Hence, the H₀₂ is rejected at the 0.05 level, and researchers advocate that there is a statistically significant difference between rural and urban elementary school teachers in their awareness of cyber security.

FIGURE:2

Conclusion:

According to the results of the present study, male and female elementary school teachers have concerns about cyber security, but there is no statistically different awareness of cyber security.

Furthermore, the measure of urban and rural teacher's awareness about cyber security was statistically different.

Teachers are not only instructors for children; teachers play a vital role in shaping students towards a positive and secure mindset about digital literacy and safety. We are all aware that using the internet in the modern education system is a common aspect of creating a teaching and learning environment. So teachers should follow cyber security measures to ensure healthy digital literacy.

Suggestion for the Further Research:

1. Researchers suggest some key areas for further research that are related to the current topic.
2. Improving cyber security awareness among in-service teachers through various professional development approaches.
3. The impact of cyber security awareness on students' safety.
4. The effects of the cyber security awareness program among school-going adolescents are significant.
5. A cyber-security awareness program in teacher education institutions is needed to ensure the security of digital literacy.

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