Awareness About Cyber Security Among Prospective Teachers

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Abstract

This is an era of technology. Technology is engaged directly or indirectly with us from early morning to sleep at night. For example, education, shopping, banking, business, etc. Along with these facilities, there is a threat of fraudsters who are ready to cheat a person with technology. It is observed in newspaper articles that many people are being cheated by cybercrime. People of today's era have to be aware about cybercrime and its security. Prospective teachers can easily pass the message related to cybercrime and cyber security. Researcher had developed a web-based questionnaire to check awareness about cyber security among prospective teachers.

Research method was survey in the present study. Tool for data collection was Cyber Security Awareness Test (CSAT) which is developed by the researcher. The sample of the present study is total 261 students currently studying B.Ed. in the teacher education colleges of Gujarat state. Data analysis was done with the help of Microsoft excel program. The researcher found that there is an above average level of awareness about cyber security among prospective teachers. Students faced some difficulties to understand technical terminologies related to cybercrime and cyber security. There are very few teacher education colleges/ institutes of Gujarat had organized some programs for cyber security awareness. Teacher education colleges/ institutes have to organize cyber security awareness programs to improve awareness level among prospective teachers.

Keywords: Cyber security, Cyber security awareness, Cyber security awareness Test (CSAT), Prospective Teachers.

Introduction

Today's era is an era of technology. Technology is directly or indirectly connected with us for everything in our day to day life. Now a day, many services like education, shopping, banking, business, gaming, entertainment, ticket booking etc. have now became online. Along with this convenience and facilities, there is also the threat of cyber security. Therefore, it is very important that today's generation would be aware of cyber security. If the prospective teachers have awareness about cyber security then the message of the awareness about cyber security can be easily reached to the next generation.

This research work was conducted on the trainees currently studying B.Ed. in the teacher education colleges of Gujarat state to find out the awareness about cyber security among prospective teachers.

Objectives of the research

To check the awareness about cyber security among prospective teachers.

Review of related literature

RBI (2022) released a press note on Consumer awareness – Cyber Threats and Frauds. It aims to aware people about safe digital banking practices, how to save us from fraudsters while using digital banking service. RBI urges people to practice safe digital transactions by taking all due precautions while doing online payments and digital transactions. Chen Zhang and Janet J. Prichard (2009) founded that general awareness about importance of cyberspace security education was relatively high, cyberspace security education for persons (specially college students and secondary school students) using internet through different media needs urgent improvement. Alzubaidi (2021) founded that 32.5% of participants (total 1230 participants) didn't have any idea about phishing attacks, 21.7% were victim of cybercrimes. So, there were many participants with less awareness about cyber security. Muhirwe and White (2016) suggested that colleges have to organize cyber security awareness programs or activities that are targeted to various levels in school or higher education. This kind of activities should be included in orientation program for fresh students. Chaudhary Sunil and others (2015) collected data from future IT professionals and founded that students are not free from security misconceptions. Security education would be called upon to address and courses about online security could be a part of a strategy. Ana Kovasevic and others (2020) conducted a research on today's techno-savvy students and proved that they didn't feel safe in cyber environment, they didn't behave securely and didn't have adequate knowledge to protect themselves from cybercrime. Suwarna Rani Subramaniam (2017) carried out a research on 318 students for finding awareness about cyber security. The research showed that awareness level was an average level and there was no significant difference in cyber security awareness level between male and female students, students with better computing skills have better level of awareness about cyber security. Moli Zwilling and others (2019) developed CAEF (Computer Awareness Education Framework) for improvement of cyber security awareness. K. Senthilkumar and Sathishkumar E. (2017) carried out a survey on cyber security awareness. It showed that the college students of Tamil Nadu were having above average level of awareness about cyber security which could help them to protect from cyber-crimes. Peiter Potgieter (2019) founded that there was a lack among students about cyber security awareness. There was a suggestion that the educational institutions would have to provide materials of cyber security awareness to their students for improvement of awareness.

Following from all of the above review of related literature, the researcher found that none of the research was carried out to find awareness about cyber security among prospective teachers/ B.Ed. trainees. The researcher also believes that the prospective teachers should also have a better awareness about cyber security so that they can transform their knowledge to next generation students.

Delimitation of the research

This research work was conducted on the trainees/ students currently studying B.Ed. in the teacher education colleges of Gujarat state only. The tool of the survey was web-based questionnaire to collect the data from prospective teachers. So, there was no face-to-face meeting with the participants.

Research Question

How is the awareness about cyber security among prospective teachers?

Research method

Survey method was used for the present study. Survey was carried out online through Google forms namely, Cyber Security Awareness Test (CSAT).

Population and Sample selection

In the present study, B.Ed. students of academic year 2022-23 of Gujarat state was taken as population. As it is a web-based online survey of awareness about cyber security and a vast area of Gujarat state, Google form link for this survey was shared to principals and professors of various B.Ed. Colleges of Gujarat state. Total 261 Students took part in the web-based online survey were became sample of the present study.

Tool

Researcher developed a web-based questionnaire through Google forms namely, Cyber Security Awareness Test (CSAT) to know the awareness of B.Ed. trainees about cyber security. There were total 26 questions in the CSAT. 7 questions of Yes/no type, 14 MCQs, 3 Short / Descriptive questions were included in the CSAT.

Data analysis and Interpretation

Data was collected by self-made web-based questionnaire through Google form namely, CSAT. Collected data was analyzed with the help of Microsoft Excel program. Total 261 responses were received through Google form. Gender wise 63.6% responses of female students and 36.4% responses of male students were received. From total 261 respondents, 60.2% of students belongs to urban area, 33.3% of students belongs to rural area and 6.5% of students belongs to semi-urban area. Among them 41.4% responses of students with Science stream as a major subject, 38.7% responses of students with Arts stream as a major subject and 19.9% responses of students with Commerce stream as a major subject. From total 261 responses, 70.5% responses of students with Grant-in-aid colleges, 21.5% responses of students with Government colleges and 8% responses of students with Self-finance colleges.

There were total 6 questions with Yes/No type. Analysis of these questions is shown in the following table-1.

Table-1

Sr. No.	Question	% of Yes responses	% of No responses
1	Have you ever heard the word 'Cyber Security'?	97.7	2.3
2	Do you click on the advertisement links, while playing online game?	93.1	6.9
3	Have you ever shared your personal details like Mobile No/ E-mail Id on unknown websites and links?	93.1	6.9
4	Do you purchase products by watching ads on social media platforms like Facebook/Instagram?	82.4	17.6
5	Have you ever read any material related to Cyber Security?	70.9	29.1
6	Was any 'Cyber Security Awareness' program organized in your College?	77.0	23.0

From table-1, It can be obtained that majority of the students are aware of the term cyber security, didn't trap by fraudsters, read some materials related to cyber security and attend some program based on the theme. So, it can be said that B.Ed. Students have above average level of awareness about cyber security.

There were total 17 questions with multiple choice questions. Analysis of these questions is shown in the following table-2.

Table-2

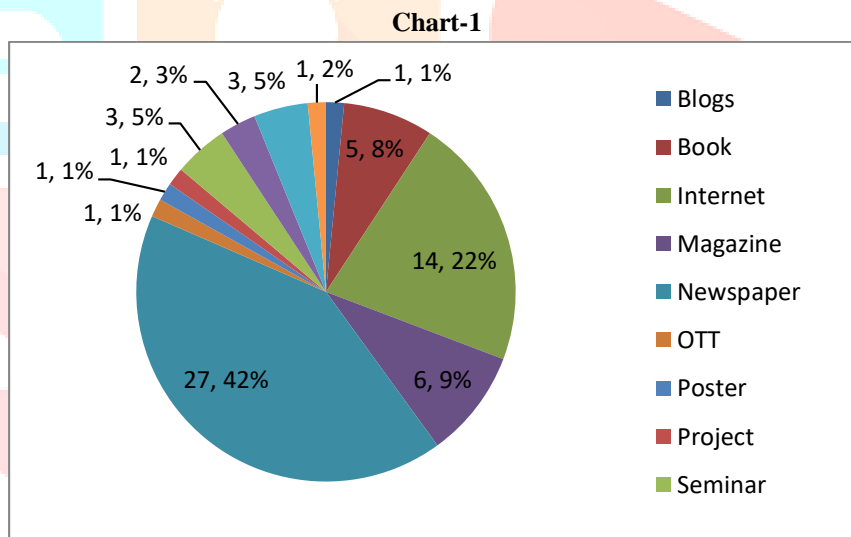| Sr. No.	Question/ Statement	No. of correct options	% of correct options
7	Who can get attacked by cyber-crime the most?	213	81.6
8	Which of the following option is suitable for using the Internet?	221	84.7
9	Through which medium a person gets fake messages?	205	78.5
10	What should be kept in mind while using public computers?	243	93.1
11	What will you do if someone is bullying you Online?	258	98.9
12	What steps will you take if your phone is stolen?	249	95.4
13	As per the guidelines by RBI, you must not share _____ number of our Debit / Credit card with others.	251	96.2
14	Which government application is used to save documents like PAN card, Aadhar card, etc. digitally?	230	88.1
15	Which of the following tricks attempted by fraudsters to get confidential details (like User ID, Password, PIN etc.)?	194	74.3
16	Phone calls pretending to be from bank in order to lure customers into sharing confidential details for KYC-updation/ unblocking of account etc. are called as _____.	58	22.2

17	What do you mean by Phishing?	88	33.7
18	Identify fake website from the following.	233	89.3
19	Which of the following is a strong password for Milan Patel (Birth date: 01/06/1982)?)	236	90.4
20	What would you do if you received an email like the given image?)	253	97.3
21	Which branch is there in Police Department for Online – Security related queries?)	232	88.9
22	Which Act is framed for Cyber Security?	100	38.3
23	If you are a victim of Cyber Crime, you will file complaint on which toll free number?	161	61.7

From table-2, It can be observed that majority of students have better understanding regarding awareness about cyber security except some topics like laws/ rules about cybercrime, toll free number to file a complaint, terminologies of cybercrime.
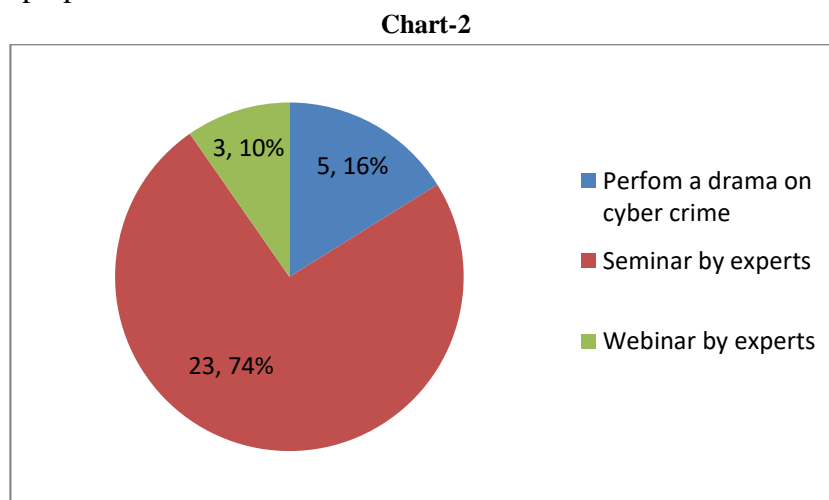
There were total 3 questions open ended questions. Analysis and interpretation of these questions are given as below.

Q-24: which is the official website for cyber security portal? For this question, only 65 students (25%) gave the correct answer.

Q-25: Provide the details of material you read which is related to cyber security. (If any). For this question, there are total 66 responses received. Different materials have been read by the students related to cyber security. A pie chart (Chart-1) was prepared to highlight the cyber security related materials read by students. From chart-1, it can be observed that majority of students have read newspaper articles related to cyber security.

Chart-1

Q-26 Provide the details related to Cyber Security Awareness program organized in your college/ institute. (If any). For this question, there are total 31 responses received. From chart-2 It is observed that many colleges/ institutes had organized seminar related to cyber security awareness. While some colleges/ institute organized webinars and prepared drama also.

Chart-2

Findings of the study

This survey was carried out to check awareness about cyber security among prospective teachers. The result of the survey shows that awareness about cyber security among prospective teachers is above average level. They faced some difficulty to understand technical terminology related to cybercrime. Very few teacher education colleges/ institutes organized programs related to cyber security awareness.

Implications

The teacher education colleges/ institutes have to organize some programs like seminar, webinar, workshops, drama, poster making competitions, quiz etc. to improve awareness about cyber security for prospective teachers. If the prospective teachers have better awareness of cyber security, they can pass this message to the future generations.

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