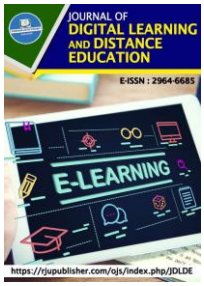

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Exploring Computer Anxiety among Prospective Teachers in Himachal Pradesh, India

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Abstract

This study explores computer anxiety among prospective teachers, defined as the fear or apprehension some individuals experience when using technology. The primary objectives were to assess the overall level of computer anxiety and to examine differences based on gender and academic stream. Utilizing a descriptive survey method, the research involved 100 participants enrolled in a B.Ed. program, comprising 59 females and 41 males, with 53 from the science stream and 47 from the humanities stream. Data were collected using a self-developed Computer Anxiety Scale (CAS) with a reliability coefficient of 0.81. The results indicated a moderate level of computer anxiety across all participants, with no significant differences observed based on gender or academic stream. These findings suggest that while prospective teachers exhibit moderate computer anxiety, this anxiety is consistent regardless of gender or academic background. The study highlights the need for targeted interventions to reduce computer anxiety and enhance technological competence among future educators.

Keywords: Prospective Teachers, Computer, Computer Anxiety

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Introduction

The former Honorable Prime Minister of India Rajiv Gandhi brought revolutionary changes by introducing computers in the Information and Communication Technology sector of India. At that time, computers were mostly used in the proper functioning of multinational companies. However, over time, computers have become integral to every facet of life. Society has seen a rapid increase in technology development and infiltration into all aspects of society, making it heavily dependent on technology to function and it has become an essential part of our daily life (Yuan et al., 2022); (Kumar et al., 2021). ICT integration enables academic programs and is the key to various educational improvements and social reconstruction (Akram et al., 2022); (Xu et al., 2021). Computers have become essential tools for effective teaching-learning practices and administering daily institutional

life, as they can manage attendance records, income-expenditure accounts, annual results, etc. with ease and accuracy (Lucky, 2022).

Computers are significant teaching-learning tools for both teachers and learners, capable of appealing to our eyes, ears, and emotions. Equipped with multimedia capabilities, computers can engage our visual and auditory senses as well as evoke our emotions (Chen & Ibrahim, 2023). A teacher now uses PowerPoint presentations to deliver lectures, replacing the traditional methods of teaching that rely on blackboards, chalkboards, slides, and transparencies. In the past, teachers frequently used pictures, charts, graphs, globes, and other tools as teaching aids. Today, all these elements can be projected onto a screen with added effects and animations. In essence, teachers can integrate computer technology into their daily lesson planning. Students can save and store PowerPoint presentations on their computers, allowing them to learn at their own pace and convenience. Computers have also shifted us from reading hard copies of books, magazines, and newspapers to accessing online digital documents, such as e-books and online newspaper articles (Kang et al., 2021).

According to (Javaid et al., 2022), computers enable efficient access to internet resources, streamline assignment completion, and enhance communication and feedback. As computers become increasingly prevalent in educational institutions, it is crucial to focus on computer literacy. The successful integration of computers in education depends on individuals' ability and efficiency in using them. However, some people experience fear when working with computers, which needs to be addressed. Teachers often feel apprehensive about integrating technology into their classrooms or using it before entering the classroom (Anderson & Putman, 2020). Researchers refer to this apprehension as computer anxiety or computer phobia. Computer anxiety is the fear of computers when using the computer or considering the probability of computer use (Popoola & Adedokun, 2023). According to (Almaiah et al., 2022), computer anxiety is defined as a person’s tendency to experience a level of uneasiness upon imminent use of a computer.

In the digital age, the integration of technology in education has become increasingly prevalent, reshaping the way educators teach and students learn. As prospective teachers in Himachal Pradesh, India, embark on their journey to becoming educators, it is crucial to examine the phenomenon of computer anxiety, which may impact their readiness to effectively utilize technology in the classroom.

Thus, this research aims to examine computer anxiety among prospective teachers with a focus on the following objectives:

1. To assess the level of computer anxiety among prospective teachers.
2. To compare computer anxiety among prospective teachers based on gender.
3. To compare computer anxiety among prospective teachers based on their academic stream.

Methodology

The present study utilized a descriptive survey method to achieve its objectives, focusing on exploring computer anxiety among prospective teachers enrolled in B.Ed. courses in various colleges affiliated with Himachal Pradesh University, Shimla. The population for this study comprised all prospective teachers in these educational institutions. A stratified random sampling technique was employed to select a sample of 100 prospective teachers from Himachal Pradesh, consisting of 59 females and 41 males, as well as 53 prospective teachers from the science stream and 47 from the humanities stream. To measure computer anxiety, the researcher developed and standardized her computer anxiety scale, which included two parts: gathering demographic information and presenting 35 items related to computer anxiety rated on a five-point Likert scale. The scale demonstrated good reliability with a coefficient of 0.81 using the split-half method and was found to have both face and construct validity.

Results

Table 1. Mean of All Prospective Teachers on Computer Anxiety Scale (CAS)

Respondent	N	Mean
Total	100	91.23

An analysis of the table shows that all the prospective teachers scored a mean value of 91.23 which lies in the interval between 87 and 104 on the computer anxiety scale representing a moderate level of computer anxiety. Hence, the prospective teachers possess moderate computer anxiety. Ho: There is no significant difference in computer anxiety among prospective teachers about their gender.

Table 2. Mean and SD Scores of Prospective Teachers on the Computer Anxiety Scale (CAS) based on Gender

Gender	N	Mean	SD	't' (df = 98)
Female	59	92.78	13.04	1.477 (N.S)
Male	41	89.00	11.88	

N.S. (Non Significant)

The above table discussed the impact of computer anxiety among female prospective teachers and male prospective teachers. The results of the t-test confirm that the null hypothesis is rejected because the calculated t value i1.477 which is less than the table value of 1.96 at a 5% level of significance. Also, the female prospective teachers perceived the highest mean value but there exists no significant difference in computer anxiety between female and male prospective teachers. Ho: There is no significant difference in computer anxiety among prospective teachers about their stream.

Table 3. Mean and SD Scores of Prospective Teachers on Computer Anxiety Scale (CAS) on Basis of Discipline

Discipline	N	Mean	SD	't' (df = 148)
Science	53	90.79	12.58	0.365 (N.S.)
Humanities	47	91.72	12.85	

N.S. (NonSignificant)

The above table inferred the impact of computer anxiety among prospective teachers of science and humanities disciplines. The results of the test confirm that the null hypothesis is rejected because the calculated t-value is 0.365 which is less than the table value of 1.96 at a 5% level of significance. Also, the prospective teachers of humanities background perceived the highest mean value but there exists no significant difference in computer anxiety of prospective teachers of science and humanities disciplines respectively.

Discussion

The study aimed to explore computer anxiety among prospective teachers in Himachal Pradesh, India, with a particular focus on examining differences in gender and academic streams. The results revealed several key insights:

- Moderate Level of Computer Anxiety: The findings indicate that prospective teachers exhibit a moderate level of computer anxiety, with a mean score of 91.23 on the Computer Anxiety Scale (CAS). This suggests that while these future educators experience some apprehension toward using technology, their anxiety levels are not severe. This aligns with (Al Mulhim & Almulhem, 2024); (Nastjuk et al., 2020); (Dickson et al., 2024), the assertion that technophobia is a major barrier to the

integration of technology in teaching, yet the moderate anxiety level observed indicates potential for overcoming these barriers with proper support and training.

- Gender Differences: The study found no significant difference in computer anxiety between male and female prospective teachers. This outcome contrasts with the views of (Gröstenberger & Selinger, 2023); (Todman, 2000), who suggested that gender might influence levels of computer anxiety. The findings suggest that gender is not a significant determinant of computer anxiety among prospective teachers, which could indicate that other factors, such as prior exposure to technology or personal interest, might play a more pivotal role (Zhang et al., 2023); (Qu & Wu, 2024); (Radyuli et al., 2022).
- Academic Stream Variations: Similarly, no significant difference in computer anxiety was observed between prospective teachers from the science and humanities streams. This result contradicts the opinions of (Erebak & Turgut, 2021); (Fernández-Batanero et al., 2021), who posited that academic background might affect technology-related anxiety. Despite varying academic specializations, both groups demonstrated similar levels of computer anxiety, implying that anxiety related to computer use is a broader issue not confined to specific academic disciplines (Beckers et al., 2023).

Overall, the results suggest that computer anxiety is a common experience among prospective teachers, but it is not significantly influenced by gender or academic stream. This points to the need for a more generalized approach to addressing computer anxiety, focusing on improving overall computer literacy and confidence among future educators.

Conclusion

As technology becomes increasingly integral to education, addressing computer anxiety among prospective teachers is essential to ensure the effective integration of digital tools in teaching practices. The study found that prospective teachers in Himachal Pradesh exhibit moderate levels of computer anxiety, regardless of their gender or academic background. These findings underscore the importance of providing targeted support and training to help these future educators overcome their apprehensions and develop the confidence needed to effectively incorporate technology into their classrooms. Efforts should be directed towards developing comprehensive training programs that not only enhance technical skills but also address the psychological barriers associated with computer use. By doing so, educational institutions can better prepare prospective teachers to leverage technology as a powerful tool for enhancing the teaching and learning process.

Conflicts of Interest

The authors declare no conflict of interest.

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