Development and Standardization of the Information and Communication Technology Anxiety Scale (ICTAS)

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ABSTRACT

Higher secondary school teachers' levels of concern about using ICT in the classroom during the first few months of the school year, and the urgency of finding solutions to this problem makes identifying its causes a top priority. Postgraduate instructors often have a great deal of worry when it comes to information and communication technology (ICT). In some instances, this anxiety may even manifest as issues with classroom management when the teacher is already feeling overwhelmed at the beginning of a course. Managing a classroom effectively becomes challenging when instructors fail to connect with their students. The usage of information and communication technologies is another big problem that could make the educator feel uneasy. Similar to how students may struggle with some courses, instructors may also have ICT anxiety when it comes to teaching and learning specific subjects. Although the use of ICT in the classroom leads to better academic achievement, the quality of instruction is often lacking. In order to improve the quality of education they provide, postgraduate instructors should be aware of their own strengths and areas for improvement. Therefore, if postgraduate instructors suffer from worry related to information and communication technology, their performance will suffer. Consequently, the researchers used established protocols to create and evaluate a scale called the Information and Communication Technology Anxiety Scale (ICTAS).

Key words: Information and Communication Technology, Post Graduate Teachers, Anxiety.

INTRODUCTION

Teachers find it challenging to prepare and present lessons when they are not experts in their subject area. Modern teaching skills, on the one hand, and student learning, on the other, provide a challenge to secondary school postgraduate educators. Advanced degree Even if they have a deep understanding of their subject matter beyond what their students need, teachers still need to be able to connect it to their students' lives. Postgraduate educators often face challenges while teaching a range of subjects, which forces them to seek out effective strategies for overcoming these obstacles. The use of appropriate information and communication technology tools is key to achieving this goal. In order for the reform to be successful, there must be a corresponding and mutually supporting emphasis on teacher quality, defined here as highly competent and well-prepared educators to carry out the duties and responsibilities of postgraduate teachers. Teachers are anticipated to cover a range of courses during this transitional period, from Core to Applied to Specialised, depending upon the school's Track and Strands. Administrators in charge of classrooms were obligated to place postgraduate instructors in courses that directly correlated with their areas of competence. Finding a close match might be challenging in certain topics, such applied and speciality courses.

Additional study is necessary to have a better understanding of these postgraduate instructors' conditions and to react properly to any behavioural, psychological, or emotional difficulties they may have in the classroom. Fear of the unknown is normal for postgraduate instructors, particularly those just starting out in the field. While carrying out their duties, educators must take into account a myriad of elements, including student conduct, the school climate, assignments, and content. Even during an internship, students may have anxiety about utilising information and communication technology (ICT) technologies. A greater prevalence was observed when comparing postgraduate professors to experienced teachers. Last but not least, after determining that ICT controls ICT anxiety, levels of anxiety about using ICT in the classroom are during the first few months of instruction. In many instances, postgraduate instructors' high levels of ICT anxiety were a result of discipline issues, while in other situations, the worry itself seemed to be the root of the difficulties. Managing a classroom effectively becomes challenging when instructors fail to connect with their students. Some topics are difficult to teach using ICT resources, which makes teachers anxious about employing them. Students' worry over using technology in the classroom leads to worse grades and less effective instruction. It is important for postgraduate educators to be self-aware.

NEED AND IMPORTANCE OF THE STUDY

In order to make their classes more interesting and suitable for students with varying learning styles, postgraduate instructors might use interactive presentations and multimedia into their sessions. With the Headspace app's guided meditation sessions, users may alleviate stress and anxiety and improve their overall health. Anxiety is a natural human emotion. When we're feeling threatened, pressured, or anxious, this is how our bodies react. Feeling anxious isn't always a negative thing. The ability to persevere, maintain vigilance, recognise danger, and find solutions to issues may be enhanced by it. ICT There are times when anxiety is beneficial. Dealing with dangers, performing at one's best, and being motivated to keep working towards objectives may all be aided by a little amount of ICT anxiety and uneasiness. On the other hand, if you're too worried about information and communication technology, it might disrupt your daily life. The stress that is associated with information and communication technologies has been dubbed "techno-stress." Uncertainty brought on by technological development is known as techno-stress.

When anxious people face challenging situations, such as when they are about to take an exam, make a major choice, or deal with an issue at work, they experience anxiety. Coping becomes easier. You could feel more energised or better able to concentrate if you're anxious. An extreme and persistent fear of computers is known as computer phobia. Sometimes, people just can't get over their fear of technology. Those who are elderly or who suffer from chronic future anxiety tend to get it more often. Lifestyle adjustments and coping mechanisms may also make a difference, in addition to medication or psychotherapy, for many persons with anxiety disorders. Childhood trauma, social isolation, adverse life experiences, occupational or academic stress, health issues (both mental and physical), and cultural and social pressures are all examples of environmental variables that may impact a student's performance in school and beyond. A person's gender may also be relevant. Compared to males, women are almost twice as likely to suffer from anxiety. Data and transportation infrastructure A person suffering from anxiety may withdraw socially and fail to appreciate life's little pleasures. It may be less overwhelming with the help of family and a skilled medical staff.

LITERATURE REVIEW:

Researchers Sumana Pal and Gupta N.L. (2023) looked examined teachers' levels of anxiety about information and communication technology in secondary schools and found no significant difference between male and female teachers in this setting. Secondary school instructors in rural and metropolitan regions are equally terrified of using technology in the classroom.

Alvin Mark, Abad, H., et al. (2021) looked at high school instructors' fears about teaching in virtual classrooms. The results showed that most of the responding educators were middle-aged women. Respondents reported little psychological, behavioural, or emotional concern when instructing online students because, for the most part, they were not overburdened with work and received fair pay.

In their study, Jose-María Fernindez-Batanero et al. (2021) investigated how instructional technology affects stress and anxiety experiences among teachers. The primary results demonstrate that instructors experience significant amounts of stress or anxiety as a result of using instructional technology in the classroom.

According to research by Heena Mittal and Jaswinder Kaur (2018), only 2.25 percent of instructors indicate a high degree of computer phobia, whereas the majority claim a neutral level. Additionally, there is a statistically significant difference in teachers' computer fear when compared by gender and stream, but no such difference when compared by teachers' degree of education.

PILOT STUDY

A pilot research was carried out with a sample of 100 postgraduate teachers working in the Thiruvarur District of Tamil Nadu, India, who were chosen at random to build and validate the Information and Communication Technology Anxiety Scale (ICTAS). No Anxiety, Moderate Anxiety, High Anxiety, and Very High Anxiety were the five levels of anxiety used to create 44 statements for the pilot research. With ratings of 5, 4, 3, 2, and 1, all 44 statements were favourably phrased. When all 44 things are added together, it gives a person's score. There is, thus, a range from a minimum of 44 to a maximum of 220.

ITEM ANALYSIS

Finding the 't' value of each statement is the next stage in validating an Information and Communication Technology Anxiety Scale after the pilot research. This value is used to produce the final scale. After compiling scores for all 100 postgraduate professors on the Information and Communication Technology Anxiety Scale, the results were sorted from highest to lowest. In order to pick the items, 27% of the subjects from the top group and 27% from the bottom group were ranked according to their overall scores. There were 27 educators in each of the two criteria groups, one from the higher and one from the lower. For each statement, we counted the number of people who said anything from "No Anxiety" to "Very High Anxiety" in the high and low anxiety categories independently. In order to calculate the 't' values, a separate worksheet was made for each statement. The 't' number indicates how well a statement distinguishes between the high and low categories. A 't' value of 1.75 or above shows a statistically significant difference in the average response between the high and low groups to a given statement (Edwards., 1957). The 32 assertions with a value of 1.75 or above were selected to make up the final scale.

Table-1

Rank Order of Items in Information and Communication Technology Anxiety Scale (ICTAS) based on 't' values

S.NO	Statement Nature	't' Value	
1.	NEGATIVE	1.010576	NOT SELECTED
2	NEGATIVE	2.527844	SELECTED
3	NEGATIVE	4.02451	SELECTED
4	NEGATIVE	5.995648	SELECTED
5	NEGATIVE	1.052214	NOT SELECTED
6	POSITIVE	2.87910	SELECTED
7	POSITIVE	1.47418	NOT SELECTED
8	NEGATIVE	0.29871	NOT SELECTED
9	NEGATIVE	1.447841	NOT SELECTED
10	NEGATIVE	4.130169	SELECTED
11.	POSITIVE	3.3981	SELECTED
12	NEGATIVE	2.191547	SELECTED
13	POSITIVE	2.754188	SELECTED
14	NEGATIVE	2.223014	SELECTED
15	NEGATIVE	1.571048	NOT SELECTED
16	POSITIVE	1.201024	NOT SELECTED
17	POSITIVE	0.19841	NOT SELECTED
18	POSITIVE	1.67415	NOT SELECTED
19	POSITIVE	1.433362	NOT SELECTED

20	POSITIVE	0.7265410	NOT SELECTED
21.	POSITIVE	0.898741	NOT SELECTED
22	POSITIVE	6.51102	SELECTED
23	POSITIVE	4.74101	SELECTED
24	NEGATIVE	2.251456	SELECTED
25	NEGATIVE	5.386520	SELECTED
26	NEGATIVE	4.602145	SELECTED
27	NEGATIVE	4.223269	SELECTED
28	NEGATIVE	5.321478	SELECTED
29	NEGATIVE	5.478173	SELECTED
30	NEGATIVE	5.491164	SELECTED
31.	NEGATIVE	2.978796	SELECTED
32	POSITIVE	2.34503	SELECTED
33	NEGATIVE	4.121463	SELECTED
34	NEGATIVE	4.04894	SELECTED
35	POSITIVE	2.21445	SELECTED
36	POSITIVE	3.26584	SELECTED
37	NEGATIVE	4.489595	SELECTED
38	NEGATIVE	3.866987	SELECTED
39	NEGATIVE	5.301402	SELECTED
40	NEGATIVE	4.174715	SELECTED
41.	NEGATIVE	4.814569	SELECTED
42	NEGATIVE	4.411447	SELECTED
43	NEGATIVE	7.689855	SELECTED
44	NEGATIVE	5.3536365	SELECTED

The final scale was formed by selecting the 32 statements with the greatest 't' values (Table-1).

RELIABILITY AND VALIDITY OF THE SCALE

Test-retest technique was used to determine the reliability of the Information and Communication Technology Anxiety Scale, which was found to be 0.78. The test also revealed the intrinsic validity to be V= 0.88. Therefore, it is possible to conclude that this scale is quite valid and dependable from the two coefficients.

CONCLUSION

The study highlights the critical impact of Information and Communication Technology (ICT) anxiety among higher secondary post-graduate teachers, particularly during the initial months of teaching. ICT anxiety not only affects classroom management but also contributes to unsatisfactory teaching performance and lower academic outcomes. Teachers who struggle to integrate ICT into their pedagogy often face difficulties in delivering lessons effectively, especially when assigned subjects outside their specialization. The findings suggest that ICT-related stress is more prevalent among newly appointed teachers, emphasizing the need for proper training and support systems to enhance their confidence and competence in utilizing digital tools.

Recognizing the significance of this issue, the investigators developed and validated the Information and Communication Technology Anxiety Scale (ICTAS) following standardized norms and procedures. With a reliability coefficient of 0.78 and an intrinsic validity of 0.88, ICTAS serves as a robust tool for assessing ICT anxiety levels among teachers. This scale provides a valuable framework for identifying teachers' challenges and implementing targeted interventions to mitigate anxiety. By addressing these concerns, educational institutions can foster a more adaptive and efficient teaching environment, ultimately improving both teacher performance and student learning outcomes.

Thus, this research makes a substantial contribution to the field of education by offering a validated scale that can be utilized for further studies and policy development. Future research should explore strategies to reduce ICT anxiety, ensuring that teachers are well-equipped to integrate technology into their classrooms effectively.

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