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A Study of Technophobia in The Use of ICT Among Secondary School Teachers in Vizianagaram District of Andhra Pradesh

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Article History	Abstract
                          CC License CC-BY-NC-SA 4.0	*This study explores the widespread problem of technophobia among Andhra Pradesh's Vizianagaram district's secondary school teachers with reference to the employment of information and communication technology (ICT) in the classroom. It investigates the impact of a number of demographic factors on teachers' technophobia, including gender, marital status, age, title, teaching experience, institution location, kind of school administration, and instruction medium. The "Teachers' Technophobia Scale," a standardized questionnaire, and a descriptive survey approach are used in this study to gather data from 500 instructors in 60 secondary schools. Results show various insights. Technophobia was shown to be unaffected significantly by factors such as gender, marital status, age, designation, and style of school administration. Teachers with more than ten years of experience, however, showed greater degrees of technophobia. Technophobia was shown to be more prevalent among rural instructors than in their urban counterparts, and it was not significantly influenced by the medium of teaching. The study also found three aspects of technophobia, with anxiety being the main factor leading to technophobia. These dimensions include teachers' apprehension about ICT, their access to ICT resources, and their views about using ICT tools. The consequences for education include the need for professional development in integrating technology into classroom instruction, the requirement for teacher orientation programs on ICT, and the promotion of confidence in technology use. The report outlines tactics for reducing technophobia and makes recommendations for actions academic associations may take to help secondary schools successfully integrate ICT. In the end, this study highlights how crucial it is to deal with technophobia in order to maximize the advantages of technology integration in the classroom.* **Keywords:** *Technophobia, ICT, Secondary Education*

1. Introduction

Education is an effective means of social reconstruction. It is the process of facilitating learning. It helps in the acquisition of knowledge, skills, values, morals, beliefs and habits necessary for the human living. It is the most powerful instruments of social, economic and cultural transformation necessary for the realization of national goals. It cultivates social, moral and spiritual values among people **(Report of the Indian Education Commission, 1964-66)**. It helps in the transmission of culture from one generation to the other. It helps to increase the productivity, achieve national and emotional integration and accelerate the process of modernization. It seeks to develop the innate capacities of the individuals.

Education system has a tremendous responsibility to transform a child into a fully developed individual. Over the ages, academicians and educationists of the country have been relentlessly working to develop a system of education which can express and promote its social and cultural identity; and accomplish the requirement of the time. The Indian Education Commission (1964-66), while reflecting upon the entire spectrum of education, reports that the standards in any given system of education at a given time depend on four elements: (i) The structure or the division of the educational pyramid into different levels or stages and their interrelationship; (ii) the duration or total period covered by different stages;

(iii) the extent and quality of essential inputs such as teachers, curricula, methods of teaching and evaluation; and (iv) the utilization of available resources (**Report of the Indian Education Commission, 1964-66**).

In the entire educational pyramid, the secondary stage of education is said to be very crucial for various reasons. It facilitates occupational and social mobility. It is considered as the minimum level of attainment for people to survive in the modern technological world. It leads to several middle level jobs, pre-job training courses and self-employment. Further, it exposes students to the contribution of science, social sciences and humanities, to the development of a nation and provides them an opportunity to understand their constitutional duties and responsibilities. Secondary education plays an important role in training the youth of the country to take an effective part in the social reconstruction and economic development of the country. In fact, it is the secondary education on which the social, economic, technical and cultural efficiency of the nation depends.

Secondary Education is crucial in the country with a large number of villages and rural population because of its terminal and transitional nature. The Government of India introduced recently 5+3+3+4 pattern in School Education in our country under **National Education Policy (NEP) - 2020**. Being a terminal stage in the educational chain, it has to attempt full development of human personality by imparting knowledge, skills and attitudes relating to the understanding of various problems faced by the students in the society. This is the stage of education that should develop in the students the right attitude towards the goals of life.

The Role of Teachers In The Teaching-Learning Process

Teaching is said to be a nation building activity and the teacher is the architect of the future. According to the **Report of the Indian Education Commission (1964-66)**, the teacher is one of the most important factors contributing to the national development. He is the pivot around which all the educational programmes such as curriculum, syllabus, textbooks, evaluation etc., revolve. The best system of education may fail to achieve the desired ends in the absence of sincere, competent and professionally talented teaches. The teacher has the rare privilege of shaping the most precious material of the land – the boys and the girls during their crucial period of development. Referring to the importance of a teacher in the educational structure, the Indian Education Commission (1964-66) rightly remarked: "Of all the different factors which influence the quality of education and its contribution to national development, the quality, competence and character of teachers are undoubtedly the most significant" (**Report of the Indian Education Commission, 1964-66, p.84**).

Teaching has become one of the most challenging professions in our society where knowledge is expanding rapidly and modern technologies are demanding teachers to learn how to use these technologies. Dynamic infusion of information technology has led to major investments in technological innovation and infrastructural development globally. Information and Communications Technology (ICT) can impact student learning to a great extent when teachers are digitally literate and understand how to integrate it with curriculum. As the teacher plays an essential role in the management of learning, teachers should equip themselves with ICT competencies to create new learning environments using the most modern technologies in the field of education. But in reality, it is observed that most of the teachers have developed a kind of fear or phobia towards the use of technology or ICT tools in the classroom teaching. They do not use even a computer to teach difficult concepts to the students. This kind of *technophobia* on the part of the teachers negatively influences the learning capabilities of the children in schools. It is the need of the hour for teachers to get rid of 'the fear in the use of technology' or do away with *technophobia* in teaching different school subjects.

The Concept of 'Technophobia'

Technophobia is the fear of advanced technology or the use of complex devices. The word, 'Technophobia' is derived from Greek '*Techne'* meaning 'art, skill or craft' and *phobos* meaning 'fear or aversion'. It is the opposite of technophilia, i.e., love for technology. In technophobia, there is a sense of irrational fear, anxiety and a feeling of being uncomfortable with the technological gadgets and their application. The constant fear and anxiety hinder teachers to accept new advancements in technology. To meet the needs of the new generation learners, teachers need to keep pace with the innovative teaching learning practices using technology effectively. But technophobia becomes a setback in adopting and adapting technology.

Technophobia can be understood as any negative psychological reaction to technology either mild or severe. The people who shun technology are generally the people who don't understand it. Usually technophobia inflicts the older generation, the generation who hasn't grown up with computers,

complicated acronyms or even calculators. People who have technophobia are known as technophobes. Technophobes can be uncomfortable with many forms of technology.

Types Of Technophobes

There are three types of technophobes.

(i) Anxious Technophobes

Anxious Technophobes are those individuals who show classic signs of being anxious when using a computer or any technological device. They exhibit the symptoms of excessive sweating and shaking.

(ii) Cognitive Technophobes

Cognitive Technophobes are those individuals who may appear cool, calm and collected externally; but are experiencing negative cognition internally. A person with cognitive technophobia sometimes makes statements like: 'I am going to lose all my work on my computer'.

(iii) Uncomfortable Users

Uncomfortable Users are those individuals who show negative attitudes or slighter anxiety as they lack sufficient information about computers or technological devices to use them effectively.

Factors Contributing for The Technophobia of Teachers

The following are some of the factors contributing for the technophobia of teachers working in secondary schools.

(i)   Lack of awareness in the use of technology
(ii)   Lack of access to ICT tools
(iii)   Lack of confidence in the use of ICT tools
(iv)   Feeling of inadequacy of technological devices for student needs
(v)   Lack of positive attitude on the part of the introducer of technology
(vi)   Fear of Mathematics and Science subjects
(vii)   Generation gap
(viii) Not keeping pace with technology
(ix)   Lack of infrastructural and in structural facilities in schools to use technology
(x)   Expensive for managements to provide the gadgets of technology

Strategies To Overcome Technophobia

The following are some of the strategies to overcome technophobia.

(i) Develop belief

Unless and until the teachers develop the belief in the system that they need to be tuned with the digital revolution, they will be isolated. Digitalization will transform the institution totally towards the use of technology. So, it is better to adopt change in the management system as a key survival tool and to encourage teachers towards adaptability and flexibility.

(ii) Engage

Engaging ourselves with the technology has become an indispensable life skill. So the teachers should engage and keep themselves abreast with the latest innovations in the field of technology. Workshops can be organized for teachers with a view to provide them hands on experience on real life situations.

(iii) Equip

To make the above points possible, it is imperative to provide the teachers with affordable gadgets and applications to be used in their daily classroom activities. This will enhance their confidence and boost their aspiration to learn more and more towards the use of technology in the teaching learning process. In the present scenario, every teacher should adopt blended learning. The teachers are required to use technology judiciously; and in the process, they should be more sensitive to self-awareness, imagination, conscience and independent thinking.

Significance of The Study

There are several reasons why this research is considered to be significant. There has been a paucity of previous researches regarding the technophobia in the use of ICT among teachers working in secondary schools. This study is intended to bring about awareness among secondary school teachers to use

technology effectively in the classroom. Further, the teachers get motivated towards the use of ICT tools in their teaching. They get rid of their technophobia by attending a number of in-service trainings programmed that contribute for their professional development. Teachers may realize the importance of undertaking studies in information technology and online modes as a means of up-skilling their teaching abilities. This study will provide important insights into teaching to use advanced technologies by the teachers to meet the learning needs of the students of 21st century in the context of industrialization, modernization and globalization.

Need for the Present Investigation

Information and Communication Technology (ICT) has made a considerable impact on almost every aspect of society. A working familiarity with technology is becoming increasingly important in every field in general and in the field of education in particular. Computers now have become an integral part of our daily life. The advent of technology in education has changed the way people live. Considering current trends in education, a modern classroom would not be complete without computer software, internet connectivity, projectors and a variety of other hi-tech devices. So teachers find themselves wandering in a situation, where they have to make use of technology to make learning more effective. On the other side of the picture, majority of teachers agree that tools of ICT are very useful for them in the classroom; but due to their anxiety, they avoid using them in the classroom. Further they pass on their anxiety and negative attitudes to their students. Researches indicate low adoption of computer technology in schools, though the institutions provide necessary hardware and software for their users. This kind of situation is very dangerous in the Indian classrooms where teachers have anxiety or phobia to integrate technology in teaching. So, there is need to investigate the perceptions of teachers towards the use of technology in their classroom teaching, to know the causes for their technophobia; and suggest measures to overcome this problem. The present investigation is an attempt in this direction.

Statement of The Problem

"A Study of Technophobia in The Use of Ict Among Secodary School Teachers in Vizianagaram District Of Andhra Pradesh"

Objectives of The Study

The main objective of the present investigation is to study the technophobia towards the use of ICT among teachers working in secondary schools.

The following are the other specific objectives of the study:

1. To study the differences, if any existing in the technophobia of teachers in the use of ICT with regard to different demographic variables – gender, marital status, age, designation, teaching experience, location of the institution, type of school management and the medium of instruction offered by the school.

2. To study the technophobia of secondary school teachers towards the use of ICT with regard to the dimensions – Teachers' Anxiety towards ICT; Teachers' Access to ICT tools; and Teachers' Beliefs in the use of ICT tools.

Hypotheses of The Study

The following hypotheses have been formulated for the present investigation.

1. There is no significant difference in the technophobia of male and female teachers towards the use of ICT in secondary schools.
2. There is no significant difference in the technophobia of married and unmarried teachers towards the use of ICT in secondary schools.
3. There is no significant difference in the technophobia of teachers aged below 40 years and those aged 40 years and above towards the use of ICT in secondary schools.
4. There is no significant difference in the technophobia of Headmasters and School Assistants towards the use of ICT in secondary schools.
5. There is no significant difference in the technophobia of teachers with an experience of less than 10 years and those with 10 years and above towards the use of ICT in secondary schools.
6. There is no significant difference in the technophobia of teachers working in rural and urban areas towards the use of ICT in secondary schools.
7. There is no significant difference in the technophobia of teachers working in Government, Local Body and Private managements towards the use of ICT in secondary schools.

8. There is no significant difference in the technophobia of teachers towards the use of ICT in English and Telugu medium secondary schools.
9. There is no differential influence in the technophobia of teachers working in secondary schools with regard to the dimensions, Teachers' Anxiety towards ICT; Teachers' Access to ICT tools; and Teachers' Beliefs in the use of ICT tools.

Scope of The Study

The study is intended to know the influence of different demographic variables, viz., gender, marital status, age, designation, teaching experience, location of the institution, type of school management and the medium of instruction offered by the school on the technophobia of teachers in the use of ICT in secondary schools.

Further, the study is also intended to know the technophobia of secondary school teachers with regard to different dimensions of technophobia, viz., (i) Teachers' anxiety towards ICT, (ii) Teachers' access to ICT tools; and (iii) Teachers' Beliefs in the use of ICT tools.

Limitations of the Study

The study is limited to find out the technophobia in the use of ICT among 500 teachers working in 60 secondary schools located in Vizianagaram district of Andhra Pradesh. These teachers include both male and female working in Government, Local Body and Private secondary schools located in rural as well as urban areas. Further, the schools are offering instruction in English and Telugu media. The study is confined to know the technophobia of secondary school teachers with regard to three dimensions of technophobia, viz., (i) Teachers' anxiety towards ICT, (ii) Teachers' access to ICT tools; and (iii) Teachers' Beliefs in the use of ICT tools.

Review Of Related Literature

The researcher reviewed the reports of the researches conducted earlier by the other investigators in the field. She also reviewed various journals, magazines, books and research papers relating to the area of his investigation. The review of related studies relating to the technophobia of teachers towards the use of ICT in schools in India and abroad has been provided in Chapter-II of the thesis.

Method Of Research

The investigator followed the descriptive **'Survey Method'** of research for the present investigation, as it involves a clearly defined problem and definite objectives. This method is used to investigate into the conditions or relationships that exist, practices that prevail, beliefs, points of view or attitudes that are held, processes that are going on, influences that are being felt and trends that are developing. It is concerned with the phenomena that are typical or normal in nature. It focuses on answering the *how, what, when and where* questions of a research problem rather than the *why*. It requires imaginative planning, careful analysis, and interpretation of data; and logical reporting of findings. In view of the obvious advantages found in Survey method of research, the investigator adopted **Survey method** for the present investigation.

Variables Considered for The Study

Independent variables

The independent variables considered for the present study include gender, marital status, age, designation, teaching experience, location of the institution, type of school management; and medium of instruction offered by the school.

Dependent variable

Technophobia in the use of ICT tools by the teachers in secondary schools. The following are different dimensions of the Dependent variable:

(i) Teachers' anxiety towards ICT;
(ii) Teachers' access to ICT tools; and
(iii) Teachers' beliefs in the use of ICT tools.

Population

The population of the present investigation comprises of Headmasters and School Assistants working in secondary schools.

Sample

Out of the various methods used for drawing the sample, 'Stratified Sampling' is the most frequently used method, for, in this method, no significant group is left unrepresented and it gives a greater control over the sample. The investigator preferred **'Stratified Random sampling'** method for drawing the sample for the present investigation due to the obvious advantages found therein. The sample of the present investigation consists of 500 teachers (60 Headmasters and 440 School Assistants) working in 60 Secondary Schools located in the rural as well as urban areas in Vizianagaram district of Andhra Pradesh has been selected using **Stratified Random Sampling method**.

The Research Tool

In Survey method of research, a 'Questionnaire' is felt a better research tool for collecting data. It is the most frequently used research tool consisting of a very concise, pre-planned set of questions designed to yield specific information to meet the research needs. The rating scale approach and its variant shave been the most commonly used methods of measuring the perceptions or attitudes.

Hence, the investigator used a well-organized **questionnaire (Teachers' Technophobia Scale)** as the tool of research to measure the technophobia of teachers towards the use of ICT in secondary schools for purpose of collecting data for the present investigation.

Standardization of The Tool

The standardization of the research tool involves finding out the Reliability, Validity and Objectivity of the tool. The investigator has taken into consideration three important factors affecting Reliability – (1) Length of the tool, (2) Objectivity in scoring and (3) Clarity of instructions.

For the present investigation, the investigator has prepared a questionnaire with 34 items. A preliminary administration of the scale was carried out on a small sample of 50 teachers (10 Headmasters and 40 School Assistants) working in the secondary schools. The sample taken here is exclusively for the Pilot study; and is not included in the sample for final study. The Co-efficient of Reliability for the items included in the scale has been calculated using Spearman-Brown formula. The Co-efficient of Reliability for all the items in the scale is found to be **0.924**; and hence the tool is said to be reliable.

The validity of the tool has been determined by the investigator taking into account the item analysis. For the present investigation, the discriminating power has been computed by counting the favorable responses to the item in the high group, subtracting the number of favorable responses in the low group and dividing it by the number of respondents either in the high group or the low group.

The Discriminating Power has been calculated for all the 34 items included in the questionnaire. Out of the 34 items, the Discriminating Power is observed positive in respect of 30 items and is negative for 4 items. Hence, the four items, whose Discriminating Power is negative, have been rejected; and the final form of questionnaire consists of 30 items, which are fool proof in all respects.

The investigator has prepared the closed ended questionnaire with fixed response categories. Hence, there is no chance for the subjective bias in assigning scores for the responses given by the respondents. Hence, the tool is said to possess objectivity. Since the research tool has fulfilled all the requirements of a standardized tool, the tool taken for the present investigation is said to be a standardized tool. The tool is administered to the teachers who are considered as sample for the present investigation.

Administration of The Tool

The final form of the questionnaire consisting of 30 items was administered to 500 teachers (60 Headmasters and 440 School Assistants) working in the Secondary Schools of Vizianagaram district in Andhra Pradesh for purpose of collection of data for the present investigation. The sample considered for final administration of the tool is exclusive; and the respondents of pilot study are not included in this sample.

Scoring Procedure

The responses of the subjects on all the items are quantified duly assigning the numerical values 5, 4, 3, 2 and 1 to SA (Strongly Agree), A (Agree), U (Undecided), D (Disagree) and SD (Strongly Disagree) respectively in the case of positive statements; and the reverse procedure is followed in the case of negative statements. All the above scoring is used for further statistical treatment. The maximum possible score is 30 x 5 = 150 and minimum score is 30 x 1=30 in respect of each respondent. The high score indicates a higher level of technophobia of teachers towards the use of ICT in secondary schools and the lower score indicates a lower level of technophobia of teachers towards the use of ICT in secondary schools.

Available online at: https://jazindia.com

Analysis and Interpretation of Data

On administration of the tool to the respondents, the obtained scores have been tabulated and analyzed using different statistical techniques such as:

        (i)   Arithmetic Means

        (ii)   Standard Deviations

        (iii)   Critical Ratios

        (iv)   't'-tests

        (v)   F-ratios; and

        (vi)   Percentage Analysis

4. Conclusion

It On the basis of the analysis and interpretation of data, the investigator has arrived at the following findings. These findings have formed the basis for drawing conclusions.

There is no significant difference in the technophobia of male and female teachers towards the use of ICT in secondary schools.

The results of the study revealed that gender has no influence on the technophobia of teachers towards the use of ICT in secondary schools

There is no significant difference in the technophobia of married and unmarried teachers towards the use of ICT in secondary schools.

From the findings of the study, it is concluded that the marital status has no influence on the technophobia of teachers towards the use of ICT in secondary schools. Teachers, irrespective of the fact whether they are married or unmarried, exhibited a higher level of technophobia towards the use of ICT in secondary schools.

There is no significant difference in the technophobia of teachers aged below 40 years and those aged 40 years and above towards the use of ICT in secondary schools.

The results of the study revealed that the age of the teachers has no influence on their technophobia towards the use of ICT in secondary schools. Technophobia towards the use of ICT in secondary schools is observed among teachers who are elderly and those who are young.

There is no significant difference in the technophobia of Headmasters and School Assistants towards the use of ICT in secondary schools.

The results of the study revealed that the designation of the teachers has no influence on their technophobia towards the use of ICT in secondary schools. The headmaster of the secondary school, as Head of the Institution, takes more responsibility for inclusion of children with special needs in regular secondary schools with a view to provide quality education for all children under one roof. Hence, the Headmaster expressed better attitude towards inclusion as compared to their counterparts working as School Assistants.

There is significant difference in the technophobia of teachers with an experience of less than 10 years and those with an experience of 10 years and above towards the use of ICT in secondary schools.

The results of the study revealed that teachers with an experience of 10 years and above possess a higher level of technophobia towards the use of ICT in secondary schools as compared to their junior counterparts with an experience of less than 10 years. The new entrants into the teaching profession are more curious about using ICT tools in their classroom teaching challengingly during their beginning years of service. But with the passage of time, the teachers feel it burdensome to use technology in the classroom. Hence, teachers with an experience of 10 years and above have shown higher levels of technophobia as compared to their junior counterparts with an experience of less than 10 years towards the use of ICT in secondary schools.

There is significant difference in the technophobia of teachers working in rural and urban areas towards the use of ICT in secondary schools

The results of the study revealed that teachers working in rural schools possess a higher level of technophobia towards the use of ICT in secondary schools as compared to their counterparts working in urban schools.

Teacher working in rural schools have less exposure to use technological devices in their classroom teaching; and hence possess higher levels of technophobia towards the use of ICT tools in secondary schools as compared to their urban counterparts.

There is no significant difference in the technophobia of teachers working in Government, Local Body and Private managements towards the use of ICT in secondary schools.

From the findings of the study, it is concluded that the type of school management has no influence on the technophobia of teachers towards the use of ICT in secondary schools. The management of the institution – Government, Local Body or Private, is not a constraint for the teachers to use ICT tools to make their teaching more meaningful and purposeful. Hence, teachers working in schools under different managements did not show any significant difference in their levels of technophobia towards the use of ICT in secondary schools.

There is no significant difference in the technophobia of teachers working in Government, Local Body and Private managements towards the use of ICT in secondary schools.

From the findings of the study, it is concluded that the medium of instruction offered by the institution has no influence on the technophobia of teachers towards the use of ICT in secondary schools. In fact, integration of technology in classroom teaching is the responsibility of all the stakeholders in general and that of teachers in particular irrespective of the fact whether the teachers are working in an English medium school or a Telugu medium school. Hence, teachers working in English as well as Telugu medium schools have exhibited higher levels of technophobia towards the use of ICT in secondary schools.

The teachers have the highest technophobia towards the use of ICT in secondary schools with the dimension, "Teachers' anxiety towards ICT" (50.0%) followed by the other dimensions, "Teachers' beliefs in the use of ICT tools" (40.0%); and "Teachers' access to ICT tools" (30.0%).

From the results shown above, it is concluded that the teacher working in secondary schools have exhibited the highest technophobia towards the use of ICT in secondary schools with the dimension, "Teachers' anxiety towards ICT" due to the reason that they have developed a kind of fear towards the use of technology in the classroom teaching. The priority given to this aspect of technophobia is due to the reason that the teachers are not tuned towards digitalization. Further, they have a strong belief that technology cannot replace a teacher in the classroom.

Next to their anxiety towards ICT, the teachers have exhibited a higher degree of technophobia towards the use of ICT in secondary schools with the dimension, "Teachers' beliefs in the use of ICT tools". The teachers working in secondary schools have developed strong aversion towards the use of technology in classroom teaching. They have certain fear in their minds that the use of computers may reduce jobs for people; or may result in the health hazards of people. Hence, the teachers have expressed a higher level of technophobia with this dimension.

Finally, the teachers have shown a high degree of technophobia towards the use of ICT in secondary schools in respect of the dimension, "Teachers' access to ICT tools". When technology is not accessible to the teachers, they generally develop a kind of negative feeling to use it in the classroom. They feel that computers and other technological devices are not available in the schools. They expressed that they have no internet facility in the school. When the technological devices are not accessible to them, they are unable to integrate technology with their classroom teaching. Hence, the teachers have expressed their technophobia in the use of technology in teaching.

Educational Implications

The following are the educational implications of the present study.

(i) The present study helps to make the teachers realize the importance in the use of Information and Communication Technology (ICT) in classroom teaching.
(ii) The study aims at developing confidence among the teachers in the use of technology in the teaching learning process.
(iii) The study aims at removing technophobia in the use of ICT among teachers working in secondary schools.
(iv) The study highlights the need for providing orientation to teachers in the use of technology in their teaching.
(v) The study would help the teachers know various strategies and techniques to integrate technology in the teaching learning process.

(vi) The study would help the Academic Organizations like SCERTs, IASEs and the State Departments of Education to take necessary steps for the effective implementation of ICT in secondary schools.

(vii) The present study suggests ways and means of developing professional competencies among teachers following the best practices in the effective use of ICT in secondary schools.

(viii) The study helps to motivate the teachers in the use of technology effectively for the benefit of their students in secondary schools.

(ix) The study highlights the need for conducting in-service training programmes for school teachers in the effect use of ICT tools in the classroom teaching.

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